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Journal of the Society of Arts.

FRIDAY, MARCH 15, 1861.

INTERNATIONAL EXHIBITION OF 1862.—GUARANTEE DEED.

The Council beg to announce that the Guarantee Deed is now lying at the Society's House for signature, and they will be much obliged if those gentlemen who have given in their names as Guarantors, as well as others who take an interest in the Exhibition, will make it convenient to call there and attach their signatures to the Document.

GUARANTEE FUND FOR THE EXHIBITION OF 1862.

The following additions have been made since the last announcement in the *Journal* for March 8:—

*** *The names marked with an asterisk are those of Members of the Society of Arts.*

NAME.	AMOUNT.	REPRESENTING THE OBJECTS OF THE SOCIETY—ARTS, MANUFACTURES, AND COMMERCE.
*William Atkinson, 47, Gordon-square, W.C.	100	Arts.
John Heugh, Manchester	500	Commerce.
Bernhard Liebert, Manchester	500	Commerce.
George Wildes, Manchester	300	Commerce.
Philip Lucas, Manchester	300	Commerce.
*John Thomas Woodhouse, Ashby-de-la-Zouch	500	Arts.
*Alexander Robb, 79, St. Martin's-lane, W.C.	500	Arts.
John Dickinson and Co., 65, Old Bailey, E.C.	1,000	Manufactures.
Thomas Phythian, 430, West Strand, W.C.	100	Commerce.
Thomas Sowler, Manchester	100	Commerce.
John Sowler, Manchester	100	Commerce.
Francis Philip Rickards, Manchester	100	Commerce.
T. N. Hunt, 2, Upper Portland-place, W.	500	Commerce.
Kirkman Daniel Hodgson, M.P., 36, Brook-street, W.	500	Commerce.
Joseph Angell, 10, Strand, W.C.	500	Commerce.
Wm. Anderson Rose, Alderman, Queenhithe, E.C.	500	Commerce.
William Leuchars, 38, Piccadilly, W.	500	Manufactures.
*John Henry Murchison, Surbiton Hill, Kingston, S.W.	100	Arts.
*Reginald Read, M.D., 1, Guildford-place, W.C.	200	Arts.
James J. H. Lucas, 13, Upper Woburn-place, W.C.	1,000	Arts.
Thomas Cane, Mayor of Hereford	200	Arts.
*Arthur Ryland, Mayor of Birmingham	100	Arts.
Thomas Agnew, Jun., Manchester	100	Arts.
John Lamont Brodie, Manchester	100	Commerce.
Henry Calvert, Manchester	100	Commerce.
William Hepworth, Manchester	100	Commerce.
John Knowles, Manchester	100	Commerce.
Samuel Roebuck, Manchester	100	Commerce.
Edward Tootal, Manchester	500	Commerce.
Edward Walters, Manchester	100	Commerce.
William Wyld, Paris	100	Arts.
Richard Coles, Mayor of Southampton	100	Commerce.
*William Evill, jun., Lyncombe-house, Battersea, S.W.	300	Manufactures.
*Edward Vigers, 12, Chepstow-villas West, Bayswater, W.	100	Commerce.
*H. Dyte, 6, King's Bench Walk, Temple, E.C.	100	Arts.
James Whishaw, 16, York-terrace, Regent's-park, N.W.	100	Arts.
John Thomas, Mayor of Carmarthen	100	Arts.
Joseph Joel (Consul for Montevideo), Brompton Hall, Brompton, S.W.	1,500	Commerce.
John Francis Hodges, Mayor of Dorchester	100	Commerce.
Messrs. McQueen, Brothers, 184, Tottenham Court-road, W.C.	200	Commerce.
*Sir Wm. G. Armstrong, C.B., Newcastle-on-Tyne	500	Arts.
Francis Brown Douglas, Lord Provost of Edinburgh	100	Commerce.
George Lorimer, Master of Merchant Co., Edinburgh	200	Commerce.
Hugh Rose, Chairman of Chamber of Commerce, Edinburgh	200	Commerce.
Peter Clouston, Lord Provost of Glasgow	100	Commerce.
*Robert Griffiths, 69, Mornington-road, N.W.	250	Arts.
George William Martin, 68, Gloucester-crescent, W.	100	Arts.
*Ferdinand Joubert, 36, Porchester-terrace, W.	200	Arts.

NAME.	AMOUNT.	REPRESENTING THE OBJECTS OF THE SOCIETY—ARTS, MANUFACTURES, AND COMMERCE.
George Edmond Balfour, Manchester	250	Commerce.
Charles Hardy Bowker, Manchester	100	Commerce.
Wm. Thomas Blacklock, Manchester	500	Commerce.
Solomon Levy Behrens, Manchester	300	Manufactures.
Wm. George Cowlishan (James Houldsworth and Co.), Manchester	200	Manufactures.
George Charnley Dewhirst, Manchester	200	Manufactures.
James Dugdale, Manchester	1,000	Commerce.
James Collier Harter, Manchester	1,000	Commerce.
*Edward Riley Langworthy, Manchester	250	Commerce.
Henry Micholls, Manchester	100	Commerce.
Robt. Nathaniel Philips, Manchester	100	Commerce.
*John Platt (Platt, Bros., and Co.), Oldham	500	Commerce.
Walter Scott, Manchester	100	Commerce.
Henry Michael Steinthal, Manchester	100	Commerce.
John Tysoe, Manchester	100	Commerce.
Thomas Wrigley, Manchester	500	Commerce.
Earl of Bessborough, Manchester	300	Manufactures.
William Andrew Fairbairn, Manchester	500	Arts.
Thomas Caley, Norwich	100	Manufactures.
Carrett, Marshall, and Co., Sun Foundry, Leeds	100	Commerce.
Mark Smith (Wm. Smith and Bros.), Heywood, Manchester	300	Commerce.
John Carver (Carver Bros.), Manchester	100	Commerce.
Thomas Mosley (Thos. Mosley, Huish, and Co.), Manchester	100	Commerce.
Thomas Lings, Manchester	100	Commerce.
Wm. Graham, Manchester	100	Commerce.
Adolph Schwabe (Salis, Schwabe, and Co.), Manchester	500	Commerce.
John P. Hibbert, Manchester	100	Commerce.
Isaac James (Mayor of Carlisle)	100	Commerce.
Henry Driver (Mayor of Windsor)	400	Commerce.
Dr. Burzorjee, Northwick Lodge, St. John's-wood-road, N.W.	100	Arts.
Guillermo Esteban Ballaras, Seville-villa, Carlton-hill, St. John's-wood, N.W.	500	Commerce.
W. S. Adams, 57, Haymarket, S.W.	100	Manufactures.
W. M. Seaman, 199, Sloane-street, S.W.	100	Arts.
William Smith, 20, Upper Southwick-street, Cambridge-square, W.	100	Arts.
*Warren De la Rue (Thomas De la Rue and Co.), 110, Bunhill-row, E.C.	1,000	Manufactures.
*Benjamin Edgington, 2, Duke-street, Southwark, S.E.	500	Manufactures.
Joseph Maynard, Colman-street, E.C.	1,000	Arts.
James Walker, F.R.S., LL.D.	1,000	Arts.

By Order,

P. LE NEVE FOSTER, *Secretary.*

EXAMINATIONS.—LOCAL BOARDS.

The following is a list of Local Educational Boards corrected for the present year, so far as returns have been received. The attention of Secretaries of Local Boards is particularly called to Par. 14 of the Programme of Examinations, as follows:—

14. The previous Examinations must be held by the Local Boards sufficiently early in the year 1861 to allow the results to be communicated to the Council, on a Form which will be furnished on application (See Form No. 2 in Appendix), on or before the 2nd April, *i.e.*, four weeks before the commencement of the final Examinations.

Steps should therefore be immediately taken for holding the previous Examinations.

It is particularly requested that those Secretaries of Local Boards who have not transmitted a list of their Boards as at present constituted (whether there be any alteration since last year or not), will immediately do so.

*** Those Boards marked thus have been formed this year.

LOCAL BOARD FOR ABERDEEN.

Mr. HENRY A. DEWAR, M.D., Union-street, Aberdeen, *Chairman.*
John Cruickshank, LL.D., late Prof. of Mathematics, Marischal College.
Mr. James S. Brazier, Lecturer on Chemistry, Aberdeen University.
„ William Rattray, Teacher, Free South Church School.
„ David Maver, Teacher, Free Bon-Accord School.
„ H. Ambrose Smith, Actuary, Secretary to the Northern Assurance Co.
„ Peter Cleland, Teacher, School of Art.

The above constitute the *working* Local Board, in addition to which, the following gentlemen, being connected with local Institutions for adult evening instruction, are also *ex-officio* members of the Board:—

The Lord Provost of Aberdeen.
The Senior Bailie of Aberdeen.
Mr. David Thomson, Professor of Natural Philosophy, University of Aberdeen.
Rev. John C. Brown, LL.D., 156, Crown-st., Aberdeen.
,, John Longmuir, LL.D., 15 E, North-street, Aberdeen.
Mr. Alexander Kilgour, M.D., Union-street, Aberdeen.
,, John Duguid Milne, Advocate, Aberdeen.
,, James Westland, Banker, 1 King-street, Aberdeen.
,, John Miller, Manufacturer, Sandilands Chemical Works, Aberdeen.
,, William Henderson, Sen., Architect, Loch-street, Aberdeen.
,, William Ramage, Architect, Union-street, Aberdeen.
,, Thomas Melville, Iron Merchant, Gallowgate, Aberdeen.
,, William Fraser, Surgeon, Union-terrace, Aberdeen.
,, William Brebner, Manager (E. L. Co.), Flour-mill, Brae, Aberdeen.
,, Alexander S. Cook, Merchant, Market-st., Aberdeen,
,, Alexander D. Milne, Bleacher (Richards and Co.), Rubislaw, Aberdeen.
,, John Bullock, Brassfounder, 2, Denburn-terrace, Aberdeen.
,, John Gray, Engineer (McKinnon and Co.), Aberdeen.
,, James Sinclair, Mechanics' Institution, Aberdeen, *Secretary*.

** Local Board for the Aldershot District.

Capt. **Charles Edward Mangles**, Banker, and Chairman of the Royal Mail Steam Company and of the London and South Eastern Railway Company, *Chairman*.
Rev. James Dennett, Incumbent, Aldershot.
Mr. Donald Mangles Dewar, Manager of the West Surrey Bank, Aldershot.
,, Frederick Eggar, Architect and Surveyor, Alton, Hants.
,, Thomas Fabian, Clerk of Works, Royal Engineer Department, Camp, Aldershot.
,, William Hollest, Solicitor, Farnham.
,, William Ker, Clerk of Works, Royal Engineer Department, Camp, Aldershot.
Capt. George Newcome, Justice of the Peace, Aldershot.
Mr. Ben. Nichols, Solicitor, Farnham.
,, Henry Poppleton, L.C.P., Private Schoolmaster, Farnham.
Rev. Dr. Rule, Wesleyan Chaplain, Aldershot.
Mr. John Seymour, Assistant Manager of the Bank, Odiham, Hants, and Representative of the Mechanics' Institution, Odiham.
Dr. John Shoolbraid, M.D., Surgeon, Aldershot.
Mr. Chas. Stroud, Head Master of the Grammar School, Farnham, and Representative of the Young Men's Association, Farnham.
,, Thomas White, Outfitter, Aldershot.
,, James Wilkins, Clerk of Works, Royal Engineer Department, Aldershot.
,, Barrow Rule, M.C.P., Principal of the Classical and Mathematical School, Aldershot, *Secretary*.

Local Board for Andover.

The **Mayor**, *Chairman*.
Hon. and Rev. S. Best, Abbotts Ann.
Rev. C. H. Ridding, Vicarage, Andover.
Mr. Henry Thompson, Andover.
Rev. P. Ward, Andover.
,, H. M. White, Andover, *Secretary*.

Local Board for Ashburne.

Rev. J. R. **Errington**, Vicarage, Ashburne, *Chairman*.
Dr. Lee.
Mr. C. J. Welsh, Ashburne, *Secretary*.

Local Board for Ashford.

Mr. R. C. **Mansell**, Superintendent of the Carriage Department, Ashford New Town Railway Works, *Chairman*.
Rev. J. P. Alcock, Vicar of Ashford.
,, S. Lepard, Church Villas, Ashford.
Mr. J. J. Cudworth, Superintendent of Locomotive Department, South Eastern Railway Works, Ashford New Town.
,, T. H. Vie, Schoolmaster, Barrow Hill, Ashford.
,, J. Keener, Accountant, South Eastern Railway Works, Ashford New Town.
,, R. Rabson, Draper, Church Gates, Ashford.
,, F. Garaway, Schoolmaster, Ashford New Town, *Secretary*.

Local Board for Bacup.

Mr. **Thomas Aitkin**, Holmes, Bacup, *Chairman*.
,, Henry Maden, Spring Mount, Bacup.
,, J. H. Warrall, M.D., Bacup, *Secretary*.

Local Board for Banbury.

Rev. **Henry Back**, Vicar, *Chairman*.
Mr. James Stockton, Banbury.
,, A. B. Rye, Banbury.
,, Richard Henry Rolls, Banbury.
,, Charles Neighbour, ,,
,, John H. Beale, Banbury, *Secretary*.

Local Board for Barnet.

Rev. **Frederick** C. **Cass**, M.A., Hadley Rectory, N., *Chairman*.
Rev. Thomas R. White, M.A., Finchley Rectory, N.
Rev. John D. Bell, Brunswick-house, Barnet, N.
Mr. Charles T. Carter, (President of Institute) Hadley, N.
,, Frank Milne, Hadley, N.
,, Stephen J. Baldock, (Vice President of Institute), Barnet, N.
,, John Thimbleby, Barnet, N., *Secretary*.

** Local Board for Battersea.

Rev. J. S. **Jenkinson**, M.A., The Vicarage, *Chairman*.
Mr. George Alder, St. John's-hill.
Rev. E. B. Badcock, B.A., Surrey-lane.
Mr. William Baker, The Cedars.
,, Philip Cazenove, Clapham-common.
,, William Evill, Jun., Lyncombe-house, St. John's-hill.
,, Benjamin Edgington, Abingdon-lodge, Lavender-hill.
Rev. Robert Graves, M.A., The Training College.
Mr. James Hewitt, F.R.G.S. ,, ,,
,, Charles Knight, Bridge-road-west.
,, James Lord, Wandsworth Common.
,, Charles Lucas, Sisters'-houses, Clapham Common.
,, John May, Hyde-road.
,, John Richardson, Bridge-road-west.
,, J. Sherratt, St. John's-hill.
,, George Shaw, L.R.C.S., Portland-house, King-street.
,, G. H. Simmonds, Bridge-road-west.
,, John Arch Stuart, Bridge-road.
,, William Sugden, B.A., Shakspere-villas.
Rev. I. M. Soule, St. John's-hill.
Mr. Charles Sumner, Clapham-common.
Major Cam Sykes, ,, ,,
Mr. Henry Sykes Thornton, M.A., F.R.S., Clapham-common.
,, Samuel Urwick, St John's-hill.
,, James Walton, Highbury-house, Lavender-hill.
,, T. E. Hardy, Bridge-road-west, and Lammas-hall, Battersea, S.W., *Hon. Secretary*.

Local Board for Belfast.

Mr. Joseph John Murphy, 13, College-square, East, Belfast, *Chairman.*
,, Thomas M'Clinton, 81, Donegall-street, Belfast.
Rev. John Scott Porter, 16, College-square East, Belfast.
Mr. Robert Patterson, 6, College-square North, Belfast.
Rev. Isaac Nelson, Sugarfield, Shankhill-road, Belfast.
Mr. Hamilton Pink, 2, Windsor-place, Belfast.
,, Charles Rainey, 118, Joy-street, Belfast.
Rev. William Julius M'Cullagh, Ballysillan, Belfast, *Secretary.*

Local Board for Berkhamsted.

Rev. J. Hutchinson, M.A., Rector of Berkhamsted' *Chairman.*
,, J. W. Cobb, B.A., Curate of North Church.
,, F. B. Harvey, S.C.L., Grammar School.
,, J. Hodge, Independent Minister.
,, J. R. Crawford, M.A., Master of Grammar School. *Secretary.*

Local Board for Birmingham and Midland Institute.

Mr. Arthur Ryland, Mayor, Calthorpe-street, Birmingham, *Chairman.*
,, W. Mathews, jun., M.A., Estate Agent, Hagley-road, Birmingham.
Rev. E. H. Gifford, M.A., Head Master of King Edward's School, Birmingham.
Mr. Robert Wright, Accountant, Temple-row West, Birmingham.
Sir Francis E. Scott, Bart., Great Barr Hall, near Birmingham.
Mr. Alderman Sturge, Corn Merchant, Broad-street, Birmingham.
,, Alderman Smith, Manufacturer, Calthorpe-street, Birmingham.
,, Alderman Manton, Manufacturer, Great Charles-street, Birmingham.
,, Councillor Gibbs, Wholesale Haberdasher, Temple-street, Birmingham.
,, Sebastian Evans, M.A., St. Ives, Highgate, Birmingham.
,, J. D. Goodman, Merchant, Minories, Birmingham.
,, Frederick Elkington, Manufacturer, Newhall-street Works, Birmingham.
,, Thomas Martineau, Solicitor, Cannon-street, Birmingham.
,, John B. Hebbert, Solicitor, New-street, Birmingham.
,, W. C. Aitken, Designer, Cambridge-street Works, Birmingham.
,, George Dixon, Merchant, Broad-street, Birmingham.
,, T. P. Salt, Surgical-instrument Maker, Bull-street, Birmingham.
,, Thomas P. Heslop, M.D., Temple-row, Birmingham.
,, C. E. Mathews, Solicitor, Waterloo-street, Birmingham.
,, Joseph Hart, Dyer, Hunter's-lane, Handsworth, Birmingham.
,, G. N. Potter, Brass-founder, Scholefield-street, Birmingham.
,, John Jaffray, Newspaper Proprietor, New-street, Birmingham, *Hon. Secretary.*

Local Board for Bishops' Stortford.

Rev. Thos. T. L. Bayliff, M.A., Vicar of Albury, Herts, *Chairman.*
Mr. Joseph Bell, M.A., Head Master, Collegiate School, Bishops' Stortford.
Rev. William J. Copeland, B.D., Rector of Farnham, Essex.
Mr. E. M. Dillon, M.A., Collegiate School, Bishops' Stortford.
Rev. Godfrey Goodman, Head Master, High School, ditto.
Rev. John Menet, M. A., Chaplain, Diocesan Training School, Hockerill.
Rev. William Mirrielees, M.A., High School, Bishops' Stortford.
Mr. G. Augustus Starling, M.D., L.R.C.P., Windhill, Bishops' Stortford.
Mr. F. Woodham Nash, B.A., Sion house, Birchanger, Bishops' Stortford, *Secretary.*

Local Board for Blackburn.

Mr. Miles Baron, draper, Northgate, Blackburn, *Chairman.*
,, Ellis Duckworth, builder, Blackburn, *Vice-Chairman.*
,, John Bell, goods traffic manager, Blackburn.
,, James Booth, druggist, Blackburn.
,, James Garstang, grocer, Blackburn.
,, John Garstang, schoolmaster, Blackburn.
,, Robert Hopwood Hutchinson, cotton spinner, Blackburn.
,, Thomas Livesey, mechanical engineer, Blackburn.
,, J. H. Margerison, book-keeper, Blackburn.
,, John Robinson, 31, King-street, Blackburn.
Dr. J. Withrington, Blackburn.
Mr. Robert C. Radcliffe, Solicitor, Blackburn, *Hon. Secretary.*

Local Board for Blandford.

Mr. Spence Abbott, Draper, &c., West-street, Blandford, *Chairman.*
,, Edward Fisher, Draper, Market-place, Blandford.
,, Wellington E. Groves, Pharmaceutical Chemist, Market-place, Blandford.
,, James B. Green, Architect and Surveyor, Salisbury-street, Blandford, *Secretary.*

Local Board for Bradford.

Rev. R. W. Smith, M.A., Incumbent of Christ Church, Hanover-square, Bradford, *Chairman.*
,, J. R. Campbell, M.A., Independent Minister, Great Horton-road.
Mr. J. A. Clapham, Manufacturer, Little Horton-lane.
,, Thomas Clark, Bank Clerk, 5, Manor-row.
Rev. H. B. Creak, M.A., Professor of Philosophy and Mathematics, Airedale College.
,, Daniel Fraser, LL.D., President of Airedale College.
Mr. J. V. Godwin, Stuff Merchant, Peel-place.
Rev. S. G. Green, B.A., Classical Tutor, Rawden College.
Mr. James Hanson, Proprietor of the *Bradford Review,* Great Horton-road.
,, Jonas Hey, Woolsorter, 1, Edward-street.
,, J. M. Jaques, Warehouseman, 5, Manor-row.
Rev. John Jones, Wesleyan Minister, Hanover-square.
Mr. James Law, Stuff Merchant, Claremont.
,, Charles Lund, Accountant, &c., Darley-street.
,, J. T. Newboult, Borough Rate Collector.
Rev. J. H. Ryland, Unitarian Minister, Cliff Villas, Manningham.
Mr. A. Smith, Warehouseman, 1, Sawrey-place.
,, S. Smith, Woolsorter, Bedford-street.
,, M. H. Walls, 66, Victoria-street, Bradford, *Secretary.*

Local Board for Sussex (Brighton).

Mr. W. Alger, Mayor of Brighton, *Chairman.*
Rev. John Allen, 4, Vernon-terrace, Brighton.
Mr. W. W. Attree, Queen's-park, Brighton.
,, S. Bastick, Brighton.
Dr. Beard, Grand-parade, Brighton.
Mr. R. B. Bessant, Brighton.
,, Philip Capon, Brighton.
,, G. Cobb, 1, Hampton-place, Brighton.
,, A. Creak, 118, Lansdowne-place, Brighton.

Rev. J. Griffith, College, Brighton.
,, E. C. Hawkins, Vernon-terrace, Brighton.
Mr. James Howell, 7, Guilford-road, Brighton.
Dr. Jardine, Portland-place, Brighton.
Rev. J. Newton, Eastern-road, Brighton.
Mr. G. de Paris, Atlingworth-street, Marine-parade, Brighton.
,, M. Penley, Gothic-cottages, Western-road, Brighton.
,, John Peto, Malvern-house, Buckingham-place, Brighton.
,, P. S. Rickards, 57, Lansdown-place, Brighton.
,, W. D. Savage, 65, Edward-street, Brighton.
,, Sleight, Eastern-road, Brighton.
Dr. Turrell, Montpellier-house, Brighton, *Treasurer.*
,, T. W. Wonfor, Clifton-cottage, Clifton-road, Brighton.
Mr. Barclay Phillips, 75, Lansdowne-place, Brighton, *Secretary.*

Local Board for Bristol.

Rev. Canon Girdlestone, M.A., Wapley, Gloucestershire, *Chairman.*
Mr. G. C. Ashmead, 1, Alma-vale, Clifton.
,, G. H. Bengough, The Ridge, near Bristol.
Rev. T. Bowman, M.A., Principal of Bishop's College, Bristol.
,, C. Brittan, M.A., Wetherall College, Clifton.
,, J. Burder, M.A., South Parade, Clifton.
Mr. J. A. Cooke, Windsor-terrace, Clifton.
,, J. D. Corfe, 31, Richmond-terrace, Clifton.
Earl of Ducie, Tortworth-court, Gloucestershire.
Mr. P. H. Edlin, Lennox-villa, Clifton.
Rev. G. Elliott, D.D., Dean of Bristol, Deanery, College-green, Bristol.
Sir A. H. Elton, Bart., Clevedon Court, near Bristol.
Mr. J. S. Fry, Cotham New-road, Bristol.
Rev. Professor Gotch, Baptist College, Stokes Croft, Bristol.
Mr. F. W. Griffin, Ph.D., School of Chemistry, Kingsdowne-parade, Bristol.
,, J. S. Harford, F.S.A., Blaize Castle, Henbury, near Bristol.
Rev. N. Haycroft, M.A., Portland-square, Bristol.
Mr. F. Hazeldine, B.A., Bruton-place, Clifton.
,, M. D. Hill (H.M. Commissioner in Bankruptcy for Bristol District), Heath House, Stapleton, near Bristol.
,, C. T. Hudson, M.A. Principal of Grammar School, Bristol.
,, W. H. G. Langton, M.P., Clifton Court, Clifton.
,, D. Mackie, M.R.S.A., Queen's-square, Bristol.
,, Henry Owgan, LL.D., Clifton-vale, Clifton.
Rev. Jas. Robertson, A.M., 1, Apsley-place, Durdham Down, Bristol.
Rev. D. Thomas, B.A., Hillside, Cotham, Bristol.
Mr. F. F. Tuckett, Frenchay, near Bristol.
,, R. H. Webb, Berkeley-square, Clifton.
Sir J. E. Wilmot, Bart. (Judge of County Court), Bristol.
Rev. J. R. Wreford, D.D.
Mr. J. F. R. Daniel, Athenæum, Bristol, *Secretary.*

Local Board for Brompton (near Chatham).

Rev. Daniel Cooke, Brompton, Chatham, *Chairman.*
,, Oliver Lang, Master Shipwright, H.M. Dockyard, Chatham.
Major John Williamson Lovell, R.E., C.B., Brompton Barracks.
Capt. Henry Schaw, R.E., Brompton Barracks.
Capt. Henry Young Darracott Scott, R.E., Brompton Barracks.
Mr. J. Greenleaf, St. Mary's Vale, Brompton, Chatham, *Secretary.*

Local Board for the Bucks and Berks Adult Education Society, Windsor.

The Hon. and Very Rev. Dean of Windsor, M.A., the Deanery, Windsor, *Chairman.*
The Hon. and Rev. Lord Wriothesley Russell, M.A., Canon of Windsor, Cloisters.
Viscount Kirkaldie, Thames-street, Windsor.
Rev. H. J. Ellison, M.A., Vicar of Windsor.
,, W. C. R. Flint, M.A., Vicar of Sunninghill.
,, C. D. Goldie, M.A., Vicar of Colnbrook, Slough.
Mr. J. A. Gilliat, Westbourne-place, Paddington.
Rev. E. Hale, M.A., Eton College.
,, H. Hawtrey, M.A., Minister of Trinity Parish, Church House, Windsor.
Mr. William Johnson, Eton College.
Rev. C. K. Paul, M.A., Senior Conduct of Eton, Eton College.
Mr. C. T. Philips, Sheet-street, Windsor, *Treasurer.*
,, T. H. Stevens, Eton College.
,, Henry Passmore, William-street, Windsor.
,, Thomas Chamberlain, Thames-street, Windsor.
Rev. Thomas Rooke, M.A., St. Alban-street, Windsor, *Secretary.*

Local Board for Bury.

Rev. E. J. Hornby, Bury, *Chairman.*
,, C. F. Hildyard, Bury.
,, W. R. Thorburn, M.A., Bury.
Mr. J. Hocking, Bury.
,, Edmund Bunting, Athenæum, Bury, *Secretary.*

Local Board for Canterbury.

The Very Rev. the Dean of Canterbury, D.D., *Chairman.*
The Rev. J. B. Kearney, M.A., King's School, Canterbury,
Mr. John S. Linford, Canterbury.
The Rev. John Mitchinson, M.A., Head Master of the King's School, Canterbury.
The Rev. Allen P. Moor, M.A., M.R.A.S., F.R.G.S., Sub-Warden of St. Augustine's College, Canterbury.
The Rev. Edward R. Orger, M.A., Fellow of St. Augustine's College, Canterbury.
Mons. L. L. Razé, Ramsgate.
The Rev. James C. Robertson, M.A., Canon of Canterbury.
The Rev. Henry P. Wright, M.A., Chaplain to the Forces, Canterbury.
Rev. Edward Gilder, M.A., Canterbury, *Secretary.*

*** Local Board for Carlisle Young Men's Christian Association.

William Browne, Esq., *Chairman.*
I. James, Esq., Mayor.
Mr. William Constable.
,, John Eccleston, *Secretary.*

*** Local Board for Carlisle Church of England Association.

Rev. W. Bell, M.A., Head Master, High School, Burlington-place, Carlisle, *Chairman.*
,, J. G. Doman, M.A., Second Master, High School, The Abbey, Carlisle.
,, T. G. Livingston, M.A., Minor Canon Carlisle Cathedral, Victoria-place.
Mr. Jos. Barnes, Teacher, William-street.
,, Alex. Richardson, English Master, High School, Cecil-street.
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Mr. Hay Sharpley, Merchant, Louth.
„ Clement Rogers, Architect, Louth.
„ Benjamin Crow, Mechanics' Institution, Louth, *Secretary.*

Local Board for King's Lynn.

Mr. Henry Edwards, St. Nicholas-street, Lynn, *Chairman.*
„ Lionel Self, Nelson-street.
„ Walter Moyse, King-street.
„ F. R. Partridge, Littleport-street.
„ Joseph Kerkham, High-street.
„ Robinson Cruso, New Conduit-street.
„ Edward L. King, Austin-street.
„ W. Taylor, High-street.
„ Henry Wells, Norfolk-street.
„ John G. Wigg, Saturday Market-place.
„ William Cooper, High-street.
„ James Nurse, King-street.
„ L. W. Jarvis, Mayor, Tuesday Market-place.
Rev. E. F. E. Hawkinson, St. John's-terrace.
Mr. Wm. Everard, King-street.
„ F. Kendle, Nelson-street.
Rev. Thomas White, Grammar School.
„ W. Leeper, Goodwin's-fields.
„ J. T. Wigner, London-road.
Mr. John Lowe, M.D., King-street.
„ Lupton, New Conduit-street.
„ T. Burton, 23, South Everard-street, Lynn, *Secretary.*

Local Board for Macclesfield.

T. U. Brocklehurst, Esq., Fence House, Hurdsfield, *Chairman.*
Mr. John Smith, silk printer, Langley, near Macclesfield.
„ William Bullock, silk merchant, Cumberland House, Macclesfield.
„ Joseph Wright, silk manufacturer, West Bank, Macclesfield.
„ Robert Brodrick, silk manufacturer, Park-lane, Macclesfield.
„ William Barker, silk manufacturer, Prospect House, Macclesfield.
„ James Birch, Park-lane, Macclesfield.
„ Matthew Clarke, book-keeper, Park-green, Macclesfield.
„ William Clarke, silk manufacturer, Macclesfield.
„ Richard Higson, silk manufacturer, Macclesfield.
„ John Platt, canal agent, Union-road, Macclesfield.
„ Samuel Rushton, silk warehouseman, Macclesfield.
„ Thomas Smith, book-keeper, Brook-street, Macclesfield.
„ George Snelus, schoolmaster, Great King-street, Macclesfield.
„ B. Furner, schoolmaster, Park-lane, Macclesfield.
„ D. B. Curwen, Park-lane, Macclesfield, *Hon. Sec.*

Local Board for Manchester.

The Mayor of Manchester, M. Curtis, Esq., Old Hall, Sale, Cheshire, *Chairman.*
Professor J. G. Greenwood, B.A., Principal of Owens College.
Rev. Canon Richson, Shakespeare-street, Manchester.
„ Alfred Newth, Professor, Lancashire Independent College, near Manchester.
Professor Theodore Hall, M.A., Lancashire Independent College, near Manchester.
Professor Bowman, M.A., Victoria-park, Manchester.
„ Arthur Ransome, M.D., St. Peter's-square, Manchester.
Rev. W. Thackeray Marriott, B.A., 5, Alma-terrace, Stretford-road, Manchester.
Mr. W. Fairbairn, LL.D., F.R.S., Polygon, Ardwick.
„ John Curtis (Curtis and Dallow), York-street, Manchester.
„ R. M. Parkhurst, LL.B., St. James's-square, Manchester.
„ R. A. Bubier, M.A., Bowdon, Cheshire.
„ Oliver Heywood (representing Manchester Mechanics' Institution), Bank, Manchester.
„ R. Rumney (representing Manchester Mechanics' Institution), Ardwick Chemical Works.
„ Thomas Marshall, Manchester Mechanics' Institution, *Hon. Secretary.*

Local Board for Middlesbro'.

Mr. E. Gilkes, Middlesbro'-on-Tees, *Chairman.*
Rev. R. Bradley, Middlesbro'.
„ A. C. Smith, Middlesbro'.
Mr. J. Jordison, Middlesbro', Printer.
„ E. Grove, Middlesbro', Agent.
„ Isaac Wilson, Middlesbro', Ironmaster.
„ William Taylor, Mechanics' Institute, Middlesbro', *Secretary.*

Local Board for Newbury.

Rev. J. L. Randall, M.A., Newbury, *Chairman.*
„ W. Cole, M.A.
Dr. Silas Palmer, M.D.
Dr. Joseph Bunny, M.D.
Mr. Joseph Vines.
„ F. Talbot.
„ T. Gurney, Newbury, *Secretary.*

Local Board for Newcastle-on-Tyne Church of England Institute.

Rev. James Snape, Royal Grammar School, Newcastle, *Chairman.*
Rev. W. R. Burnett, A.B., St. Thomas's, Newcastle.
Mr. James Henderson, Royal Grammar School, Newcastle.
„ George Lake, B.A., Clergy Jubilee School, Newcastle.
Mr. Joseph Forster, Church of England Institute, Newcastle, *Secretary.*

*** Local Board for Newcastle-on-Tyne Mechanics' Institution.

Rev. James Snape, M.A., Master of Grammar School, *Chairman.*
Mr. Wm. Lyall, teacher, Gateshead, Durham.
„ Thos. Gregson, teacher, Collingwood-street, Newcastle.
„ John Charlton, agent, Newcastle.
„ L. Goodchild, teacher, 17, Blandford-street, Newcastle.
„ J. W. Kirke, agent, Newcastle.
„ Adam Carse, 18, Mosley-street, Newcastle, *Secretary.*

Local Board for Oldham.

Mr. Jno. Geo. Blackburne, F.G.S., Civil Engineer, President of the Lyceum, Union-street, Oldham, *Chairman.*
„ Fredk. Bromley, M.R.C.S., Curzon-street, Oldham.
Rev. Jas. Bumstead, M.A., Green-hill, Oldham.
„ R. M. Davies, Soho, Oldham.
„ C. W. Robberds, M.A., Lyon Dann, Oldham.
Mr. John Taylor, cotton spinner, Mumps, Oldham.
Rev. John Hodgson, Queen-street, Oldham, *Secretary.*

Local Board for Paisley.

Mr. Thomas Coats, of Fergustie, *Chairman.*
„ William Philips, of Crossflat, Paisley.
„ Jas. J. Lamb, architect, Underwood-cottage, Paisley.
„ David Murray, painter, Gilmour-street.
„ William Mackean, soap manufacturer, New Sneddon.
„ A. R. Pollock, commission agent, Greenhill, Paisley.
„ James Reid, teacher, High-street, Paisley.

Mr. Thomas Glen, farmer, Hillhead.
„ Thomas MacRobert, solicitor, Paisley.
„ Peter Kerr, thread manufacturer, Whitehaugh.
„ Robert Wilson, engineer, Smithhills.
Rev. Andrew Wilson, Abbey Manse.
„ William Frazer, Free Middle Manse.
„ James Brown, Lore-street.
Mr. John Smart, teacher, St. James's-place.
„ John Lorimer, accountant, West Croft, Paisley.
„ Wm. Brunton, LL.D., Grammar School, Paisley
„ W. B. McKinlay, M.D., F.C.S., Paisley, *Secretary.*

Local Board for Pembroke Dock.

Mr. Edwin Bernays, Her Majesty's Dockyard, *Chairman.*
„ Robert Saunders, her Majesty's Dockyard.
„ Francis Allen, schoolmaster, Pembroke Dock.
„ Augustus Wiele, H. M. Dockyard, Pembroke Dock, *Secretary.*

⁂ Local Board for Peterborough.

Rev. W. Cape, Minster Precincts, Peterborough, *Chairman.*
Mr. H. Porter, M.D., Bridge-street, Peterborough.
„ J. T. Walker, M.B., Westgate, Peterborough.
„ J. Whitwell, Mill-field, Peterborough.
„ J. Sturton, Bridge-street, Peterborough.
„ Pollard, New-road, Peterborough.
„ C. T. Cotton, Long-causeway, Peterborough, *Secretary.*

Local Board for Portsea (Watt Institute.)

Rev. Professor Main, Royal Naval College, *Chairman.*
Mr. Thomas Brown, Royal Naval College.
„ Edwin Brown, Royal Dockyard School.
Rev. Edward S. Phelps, Chaplain R.N., Cosham.
Mr. Robert Rawson, Head Instructor, Royal Dockyard School.
„ Andrew Murray, C.E., Royal Dockyard, *Secretary.*

Local Board for Richmond.

Rev. Harry Dupuis, B.D., Vicar of Richmond, *Chairman.*
Dr. James Ellis, Sudbrook-park, Petersham, S.W.
„ Williams, Mount Ararat, Richmond, S.W.,
Mr. H. C. Lacy, Richmond-green, S.W.
Rev. J. B. French, Montague-villas, Richmond, S.W.,
Mr. Gould, Kingston-on-Thames, S.W.
Rev. W. Rigg, M.A., Grammar School, Norbiton, S.W.
Rev. William Bashall, A.M., Richmond-hill, S.W., *Secretary.*

Local Board for Rotherham.

Mr. James Yates, Oakwood-house, Rotherham, *Chairman.*
„ J. W. Brookes, Master of the Wesleyan Day School.
Rev. F. J. Falding, D.D., President of Rotherham College.
Mr. E. A. Fewtrell, Head Master, Grammar School.
„ John Guest, Moorgate-cottage, Rotherham.
„ J. Hardwicke, M.D., Rotherham.
„ S. B. Poles, Rotherham.
„ Steane, Master of the British School.
„ Joseph Ward, Master of the National School.
„ Henry Wigfield, Rotherham.
„ J. E. Williams, Wellgate-house, Rotherham.
„ W. Unwin, Rotherham.
„ Frederick Edwards, solicitor, Rotherham, } *Secretaries*
„ M.H.Habershon, Holmes, nr. Rotherham, }

Local Board for Salford.

Rev. William Birley, M.A., 17, St. Stephen's-street, Salford, *Chairman.*
„ Dr. Beard.
„ T. N. Pocklington.
„ J. B. Kennerley.
Rev. J. T. Davidson.
Mr. Charles O'Neil, F.C.S.
„ John Edwards, Barrister.
„ Charles Bradbury.
„ W. W. Platt, Councillor.
„ William Noar, Borough Treasurer, Town Hall, Salford, *Secretary.*

⁂ Local Board for Scarborough.

John Woodall, Esq., Scarborough, *Chairman.*
„ Richard Huie, Jun., Banker's Clerk, Scarborough.
„ William Rowntree, Draper, Scarborough.
John Drinkrow Hall, Esq., Victoria-place, Scarborough.
Rev. Benjamin Evans, D.D., Baptist Minister, Scarborough.
„ Robert Mitford Taylor, M.A., Vicar of Hunmanby, York.
Mr. John Richardson Travis, Scalby, Scarborough.
Rev. Chas. Shebbeare, M.A., Vicar of Wykeham, Yorks.
Mr. William Smithson Cortis, M.D., Filey.
Rev. Charles Johnstone, M.A., Vicar, Hackness, Scarborough.
Mr. Robert Turnbull, Land Agent, Hackness, Scarborough.
„ William Barry, } Town Hall, Scarborough, *Secretaries.*
„ Thomas Shields, }

Local Board for Selby.

Mr. Thomas Cutting, Druggist, Selby, *Chairman.*
„ C. F. Empson, Surgeon, Selby.
„ John Foster, Seed Merchant.
„ Charles Hutchinson, Seed Merchant.
„ George Jones, Schoolmaster.
„ W. H. Nicholson, Railway Stationmaster, Selby.
„ Charles Smith, Guano Merchant, Selby.
„ Richard Taylor, Schoolmaster.
„ John Westwood, Schoolmaster.
„ William Allison, Bank Manager, Selby, *Secretary.*

Local Board for Sheerness.

Mr. John Creasy, Navy-terrace, Sheerness, *Chairman.*
„ R. Crockford, 6, Constantia-terrace, Sheerness.
„ John Road, 5, Beach-street, Sheerness.
„ W. B. Robinson, Navy-terrace, Sheerness.
„ S. Willcocks, Chapel-street, Mile Town.
„ H. Morgan, 6, Montague-terrace, Sheerness, *Secretary.*

Local Board for Sheffield.

The Rev. Canon Sale, D.D., Vicar of Sheffield, *Chairman.*
Mr. Edmund Thorold, M.A., Vice-Principal of the Collegiate School.
Rev. Dr. Charles Ebert, Collegiate School.
Rev. E. P. Pierpoint, M.A., Second Master, Grammar School.
Dr. Bingley, F.C.S., Whitley Hall, (near Sheffield.)
Mr. E. Birks, People's College.
Mr. T. Rowbothem, People's College, Sheffield, *Secretary.*

Local Board for Skipton.

Mr. Stephen Bailey Hall, Skipton, *Chairman.*
„ John Bonny Dewhurst, Skipton.
„ George Robinson, Bailey-terrace, Skipton.
„ George Kendall, Skipton, *Secretary.*

Local Board for the South Staffordshire Union of Educational Institutes.

The Right Hon. Lord Lyttelton, *Chairman.*
Rev. J. H. Iles. Wolverhampton.
Mr. G. Bidlake, Wolverhampton.
Rev. T. H. Campbell, Wolverhampton.
Mr. H. H. Fowler, Wolverhampton.
Rev. J. Lloyd, Wolverhampton.
Mr. A. W. Wills, Wolverhampton.

Mr. J. N. Langley, Wolverhampton.
Rev. J. H. Sharwood, Walsall.
,, A. C. Irvine, Walsall.
,, Dr. Gordon, Walsall.
,, J. Bailey, The Pleck, Walsall.
,, J. S. Taylor, Walsall.
Mr. J. Cowley, Walsall.
,, W. Eagles, Walsall.
,, J. T. Crump, Walsall.
Rev. J. Lyons, Wednesbury.
Mr. Sampson Lloyd, Wednesbury.
Mr. Britten, Wednesbury.
Dr. Lynes, Wednesbury.
Rev. R. Garland, Wednesbury.
Mr. E. Hollier, Dudley.
Rev. Dr. Brown, Dudley.
,, H. S. Noott, Dudley.
Dr. Walker, Brierley Hill.
Mr. F. Smith, Brierley Hill.
Rev. S. Franklin, Brierley Hill.
,, H. Girdlestone, Penkridge.
,, J. W. Grier, Amblecote, Stourbridge.
Mr. W. Akroyd, Stourbridge.
Rev. H. Sherrard, Stourbridge.
Mr. W. England, Stourbridge.
,, W. H. King, Stourbridge.
Rev. J. Boultbee, Wordsley.
Mr. G. Thompson, West Bromwich.
Rev. J. Bradshaw, West Bromwich.
,, H. Hutton, West Bromwich.
,, J. Whewell, West Bromwich.
Mr. Cooksey, West Bromwich.
,, R. L. Chance, Junr., Smethwick.
,, H. Chance, Smethwick.
,, C. Hicks, Smethwick.
ev. T. G. Simcox, Smethwick.
Mr. A. Roberts, Tipton.
Rev. H. B. Bowlby, Oldbury.
,, J. H. Thompson, Cradley.
Mr. N. Hingley, Cradley.
,, J. P. Hunt, Cradley.
Rev. H. S. Fletcher, Bilston.
Mr. William Hatton, Bilston.
Hev. H. F. Newbolt, Bilston.
Mr. Edward Pugh, Bilston.
,, D. Kendrick, Bilston.
Rev. R. H. Peel, Handsworth.
Mr. James T. Chance, Handsworth.
Rev. M. Hathaway, Darlaston.
Mr. Thomas Bagnall, Pattingham.
Rev. G. H. Fisher, Willenhall.
Mr. R. D. Gough, Willenhall.
Rev. E. A. Kempson, Hallsowen.
Rev. J. P. Norris,
,, H. R. Sandford, } Her Majesty's Inspectors of Schools.
,, S. J. G. Fraser,
Mr. John H. Chance, Edgbaston, *Treasurer.*
,, John Jones, Trindle-terrace, Dudley, *Organizing Master.*
,, Fred. Talbot, Messrs. Chance's Schools, Spon-lane, *Hon. Sec.*

Local Board for Wakefield.

Mr. S. Holdsworth, M.D., Wakefield, *Chairman.*
Rev. J. S. Eastmead, Independent Minister, Wakefield.
,, Goodwyn Barmby, Unitarian Minister, Wakfield.
Mr. W. R. Milner, Surgeon.
,, Wm. Williamson, Ch. Clerk, Probate Court, Wakefield, *Secretary.*

Local Board for Waterford.

Rev. Thos. Wiltshire, Stephen-street, Waterford, *Chairman.*
Mr. David Keogh, Quay, Waterford.
,, Michael Prendergast, Barron Shand-street, Waterford.
,, Henry Baschet, Exchange-place, Waterford.
,, Joseph Knox Barron, King-street.
,, James Budd, Thomas-street, *Secretary.*

Local Board for Wigan.

Mr. Nathaniel Eckersley, Shelley-house, Wigan, *Chairman.*
Col. the Hon. Jno. Lindsay, M.P., Houghlands, Haigh.
H. Woods, Esq., M.P., the Larches, Wigan.
Mr. I. Ingram, Solicitor, Freckleton, Wigan.
,, R. Laing, Platt-lane, Wigan.
,, Robert Ashton, Solicitor, Wigan.
Rev. D. Blyth, Wigan.
Mr. E. Clarke, Editor of the *Wigan Examiner*, Wigan.
,, J. Fitz Adam, Barrister, Wigan.
,, W. S. France, Solicitor, Wigan.
,, W. Leech, Coal Agent, Millgate, Wigan.
,, S. Royle, Watchmaker, Wallgate, Wigan.
,, J. Shaw, Banker's Clerk, Marsden-square, Wigan.
,, J. Stuart, Outfitter, Scholes, Wigan.
,, R. Winstanley, Surgeon, Standishgate, Wigan.
Rev. T. F. Fergie, Pemberton, Wigan, *Hon. Secretary.*

Local Board for Wirksworth.

Dr. W. Webb, Wirksworth, *Chairman.*
Rev. F. H. Brett, Carsington West, Wirksworth.
Dr. Cantrell, Oak Cliff House, Wirksworth.
Rev. H. Harris, Wirksworth.
Mr. William Tomlinson, Mechanics' Institute, Wirksworth, *Secretary.*

*** Local Board for the Worcestershire Union of Educational Institutes.

John Slaney Pakington, Esq., Kents-green, near, Worcester, *Chairman.*
The Right Hon. Lord Lyttelton, Hagley-park, near Stourbridge.
The Hon. and Rev. William Henry Lyttelton, Hagley, near Stourbridge.
Sir Edmund Anthony Harley Lechmere, Bart, The Rhydd Court, Near Upton-on-Severn.
Edward Holland, Esq., M.P., Dumbleton, near Evesham.
,, James Darke, Commission Agent, Malvern.
,, George Elliott, Newspaper Reporter, *Herald* Office, Worcester.
John Swinton Isaac, Esq., Banker, Worcester.
Rev. William Lea, Droitwich.
Mr. J. F. Lowe, Accountant, Railway Offices, Worcester.
,, F. Marcus, Schoolmaster, Bromsgrove.
Rev. David Melville, Witley, near Stourport.
Mr. Herbert New, Solicitor, Evesham.
,, James Tree, Solicitor, Worcester,
Rev. W. Walters, Hanley Castle, near Upton-on-Severn. } *Hon. Secretaries.*

Local Board for York.

Rev. Canon Robinson, M.A., Principal of the Diocesan Training College, Lord Mayor's-walk, *Chairman.*
Mr. James Birchall, Government Lecturer on History, Training College, York.
Mr. Samuel William North, M.R.C.S., Castlegate, York.
Rev. Henry Vaughan Palmer, Trinity-lane, York.
Mr. Wm. Henry Parr, M.A., Blake-street, York.
,, William Tomlinson, F.R.A.S., the Groves, York.
,, Charles Cumberland, Institute of Popular Science, &c., *Secretary.*

FOURTEENTH ORDINARY MEETING.

Wednesday, March 13, 1861.

The Fourteenth Ordinary Meeting of the One Hundred and Seventh Session was held on Wednesday, the 13th inst., Thomas Sopwith, Esq., F.R.S., Member of the Council, in the chair.

The following gentlemen were proposed for election as members of the Society:—

Abraham, Henry Robert	3, Bridge-street, Westminster, S.W.
Avery, Thomas Charles	Gloucester.
Biddulph, John	Swansea.
Blyth, Philip P..........	53, Wimpole-street, W.
Bowen, Owen	4, Chatham-place, Blackfriars, E.C.
Brogden, Alexander ...	Ulverstone.
Broome, Robert	Burbage-house, Buxton.
Bruce, Right Hon. Sir James L., Knight ...	The Priory, Roehampton, S.W.
Butts, Thomas	20, Chester-terrace, Regent's-park, N.W.
Derry, David	Plymouth.
Fane, Wm. Dashwood	Board of Trade, S.W., and 7, Norfolk-crescent, Hyde-park, W.
Fisher, Peter	Whitehaven.
Fox, R. W.................	Grove-hill, near Falmouth.
Halloran, Charles	Paignton School, Preston-house, near Torquay.
Hannay, Robert	Ulverstone.
Hannay, W.	Nottingham.
Harrison, George	Newport, Monmouthshire.
Harvey, John Francis	145, Strand, W.C.
MacNeill, Sir John, F.R.S..................	Mount Pleasant, Dundalk.
Malcolm, John Wingfield, M.P.	7, Great Stanhope-street, Mayfair, W.
Moorsom, Vice Admiral C.B......................	5, Montague-place, Russell-square, W.C.
Pain, George	New Lodge, Salisbury.
Petre, Hon. Henry W.	Bedfords, Romford.
Poole, James	Wick-house, Durdham Down, Bristol.
Pridham, T.	Hyefield, Bideford.
Saunders, Chas. Alexander	Great Western Railway Station, Paddington, W.
Spowart, T................	Broomhead - house, Dunfermline.
Taylor, J. John....	Earsdon, Newcastle-on-Tyne.
Terrell, William	7, Apsley-place, Redland, Bristol.
Thomson, Wm. Gordon	14, Clifton-gardens, Maida-hill, W.
Thring, Henry	5, Queen's Gate-gardens, South Kensington, W.
Turquand, William ...	4, Mansfield-street, Cavendish-square, W.
Tylden, J. W.	Milsted Manor, Sittingbourne, Kent.
Underwood, Joseph ...	5, Hyde-park-gardens, W.
Walter, Capt. Edwin...	37*a*, Upper Grosvenor-street, W.
Williams, John	Ketley-hill, Wellington, Salop.

The following candidates were balloted for and duly elected members of the Society:—

Cole, John Richard ...	Scarnell - villa, Pembridge - gardens, W.
Croft, Charles Percy, F.R.C.S................	2, Woburn-square, W.C.
Edmiston, Charles S....	5, Charing-cross, S.W.
Fortescue, Hon. Dudley Francis, M.P.........	17, Grosvenor-square, W.
Hancock, C. F.	39, Bruton-street, W.
Lyon, Arthur	32, Windmill-street, Finsbury, E.C.
Marshall, J. G.	Headingly, Leeds.
Part, John Cumberland	186, Drury-lane, W.C.
Quallett, George Watts	10, New Bond-street, W.
Sowerby, William......	16, Park-place, Maida-hill, W.
Weinberg, J. Julius ...	Belfast.

Previously to the reading of the paper, the Chairman stated that a telegram had been received from Professor Ansted, to the effect that, owing to the recent severe gales, he would be unable to reach England till too late to be present at the meeting.

The Paper read was—

SUGGESTIONS FOR THE COLLECTION AND ARRANGEMENT of MINERALS and MINERAL MANUFACTURES at THE INTERNATIONAL EXHIBITION OF 1862.

By Professor D. T. Ansted, M.A., F.R.S, F.S.A., &c.

The near approach of another "Great Exhibition" in London seems to offer a favourable opportunity for considering and discussing the most effectual way in which the various objects likely to be brought together should be arranged, so as to produce the most satisfactory result. Such a discussion may best originate in this place, for the forthcoming, as well as the former Exhibition, have been actively promoted, by the Council and the members of the Society of Arts, and the results of the Exhibition of 1851 were here commemorated in a series of lectures. The Society itself, also, is now so widely influential by its associated institutions and publications, that no more fit body exists amongst which to obtain the facts essential to a preliminary scheme of arrangement of any kind.

It is, I think, impossible for any of us to recall to recollection the marvellous assemblage of objects of beauty and interest brought together in Hyde-park ten years ago, without feeling that while much that was striking and grand in general effect was owing to the want of systematic grouping—each commissioner crowding or distributing the raw material and manufactures under his charge in the space allotted to him, in the shortest possible time—it was, on the other hand, impossible to compare similar raw material from different sources, or similar manufactures from different localities. The modes of treatment varied almost indefinitely according to circumstances, and the results obtained, whether steps towards the complete article or the state and condition of the material under treatment, were not very carefully shown in many cases. The Exhibition was one adapted beyond anything that had been then seen to arrest the attention of all—young and old—educated and uneducated—rich and poor; it fascinated the imagination, enriching with fresh ideas even the best informed—creating a taste where it did not exist; strengthening and confirming it in those with whom taste was nascent. Every one who came was astonished and went away instructed, and taught, in spite of himself, even if he did not do his best towards learning the lesson placed before him. As a first Exhibition, it was, indeed, exactly what was needed, and it has produced a great and abiding result, the reality and extent of which are best known by those who have since studied the general progress and development of art and manufactures in this country. A national taste was then created, and it has been growing and advancing in every direction from that time to this.

But if, as I believe is the case, a true national taste has been lately generated in England, and is now growing into importance, and that this is one of the results of the Great Exhibition of 1851, it is not less certain that the taste must exercise an influence on every branch of manufacture, and even after two or three generations on the national character. Such a taste is capable of being directed and modified as well as allowed to grow, and it is hardly possible to imagine any means more likely to direct and modify national taste in a right way than to subject it to the trial of a second Exhibition, not less extensive, not less universal, and certainly not less magnificent than the first, but one in which a definite plan and system carefully carried out, shall be at once the distinctive character and the source of effects not less striking, though of a very different nature, than those obtained on the former occasion.

A careful consideration of the faults, weaknesses, and short comings of the system adopted in 1851, with the advantage of the experience gained on that occasion, and during the great Exhibition of Paris that so soon followed, ought to enable us now to see our way much more clearly than was possible eleven years ago. Then the whole of the arrangements were extemporised from abstract notions as to what might be sent—now we have a considerable amount of knowledge as to what will appear. Then we might, and did, make bold experiments, imagining beforehand how certain combinations might result, but quite unable to foresee any important reality. Now our experiments will be based on the knowledge of past effects, and it will be surprising indeed if the result does not in some measure correspond with the increased advantages we possess.

These remarks will of course apply to every department of the Exhibition—even to the division of fine arts, which, on the next occasion will, with so much propriety, form a most important section of the whole. Had it been determined in 1851 to include paintings, the machinery of arrangement, complete as it was, might have broken down under this increased pressure, nor could there have been a fit place for such objects of interest and value without a special adaptation inconsistent with the working out of the general scheme. In the same way it seems to me clear that had any attempt been made to group together all the similar objects from various countries, there would have arisen difficulties amounting to absolute impossibility, and we should have seen confusion worse confounded in more departments than one. None but those who were busily engaged in actual arrangement can imagine the nature and extent of these difficulties, but I am sure that none, whether they yielded to the obstacles or resisted them, will hesitate in admitting, that systematic and orderly grouping fairly carried out in detail, are not less desirable and obtainable in a future Exhibition than they were impossible in the last.

It was a principle in the last Exhibition to separate raw material from manufactured articles, and although in many cases there was no complete way of carrying the principle into practice, and occasionally steps were presented to view by which an article was prepared for use, this was always an interference with the system, not a part of it.

I think it will be found that in a second Exhibition it will both be easier and more instructive if the plan of arrangement be such as to connect the material with the use made of it. In this way a more instructive series will be given, and if the different materials of various countries are shown in all varieties of preparation, a great many curious and useful results cannot fail to be obtained.

Thus far I have ventured to offer suggestions applicable to all departments of the Exhibition. I would urge very strongly that the various objects of one kind, from whatever part of the world they come, should be exhibited side by side, or at least be so placed that they may without inconvenience be compared together. I should also urge that the exhibited manufactures should in all cases be accompanied by, and illustrate the raw material of which they are formed.

I am not unaware that considerable difficulty will arise in carrying these and other general principles into practical application, but I believe, unless these difficulties are overcome, no real progress will be made. The larger the Exhibition, and the more nearly it approaches completeness, the more will the absolute necessity of order be experienced. There can be no real order unless in each case there is some definite principle adopted, and some one able and willing to see the great object attained. Much more in the approaching Exhibition than in the last will this necessity be experienced, for it is recognised by all that distinct progress is to be shown, and not a mere repetition of what has long been known. I need not point out that great facility of comparison should be one of the characteristics of the method of arrangement adopted, and I am satisfied, that unless raw materials are sparingly shown in association with manufactures, and the various manufactures are placed so that like may be compared with like, without much regard to mere geographical questions, there can be no such Exhibition as England ought to show.

Perhaps there is no department in which definite order and plan are more necessary for a fit exhibition of the resources of our own and other countries, and a proper comparison of them, than that of minerals and mineral manufactures. But to give any idea of the importance of the subject, and even of the real interest that may and ought to attach to it, we require something more than an avenue of dusty specimens nearly a furlong in length, a multitude of specimens packed away in corners and out of the way places, and a few groups of exquisite and highly wrought works of art and manufacture with which the dusty specimens were never connected, and which, situated at distant points, admitted of, and certainly courted, no comparison. Outside the building, at the western extremity, were a few large and curious objects belonging to the same series, but not apparently connected with them.

I wish to remind you of these things that you may see how utterly inadequate was the representation of them to the acknowledged importance of the minerals and metals of the earth. If I were asked to mention the two things on which the material wealth of a country most depends, I should at once name iron and coal. Now, although some remarkable series of iron ores, and some samples of manufactured iron were exhibited, and an enormous expense was incurred in forwarding samples of coal and specimens of iron of large size, the want of means of presenting the various minerals, so that they should illustrate and be illustrated by the corresponding manufactures, was the cause of all this part of the Exhibition being comparatively unvisited. This, at least, was the impression made upon myself after great exertions on the part of all engaged in the arrangement of 1851, and it is for this reason that I am desirous of pointing out a means which may, I think, render the exhibition of minerals not only more useful, but greatly more attractive.

Assuming, then, in the first place, that the collections from all countries will be so far broken up as to enable them to be brought under some plan of general arrangement, and that there will be a combination of raw material and manufacture in each principal division, I would suggest a separation of the whole series of minerals and mineral manufactures into two groups, clearly enough marked in practice, although not very definable in terms. I would bring together into one group the metals and ores, the mineral fuels, the minerals, whether hard or plastic, used in construction, and a number of minerals used directly or indirectly in and for manufacturing purposes. One designation may apply to all these—they are utilitarian; they are on the whole more useful than ornamental. They are large in quantity; most of them not very showy, but all really and practically useful and valuable; rather on a large than a small scale.

The second division of minerals and mineral manufactures is quite as strongly marked, and is, I think, in practice very easily separated. It includes minerals used for ornamental and decorative purposes, for certain delicate optical and philosophical investigations, and experiments that belong to the lecture-room and the laboratory rather than to the manufactory; and for purposes of art, whether for sculpture of marble or gems, or for those lower grades of art which include house and palace decoration, and ornamental furniture.

Several things may be mentioned, as illustrating the desirableness of some such grouping, and the real practical difference existing between the two divisions. Thus, in the first division, are the raw materials in their natural state, earthy, often unattractive and little calculated to please the eye, but these are substances that represent the true material wealth of a nation, and exhibited in each case in direct association with their results, they afford ample means of exciting attention and interest. Geographical sub-divisions in each group may be introduced, and they admit of being made instructive even to the best informed persons, and while a certain amount of repetition must be involved in every conceivable method of presenting collections of natural objects and human applications, without mere technical and museum arrangement, there need not be a simple repetition of similar specimens without meaning, as was too much the case in our own last great Exhibition, and much more so in the subsequent great Paris Exhibition.

Whilst, however, in the first division the minerals exhibited are admired and valued, not on account of their beauty, but because of their numerous uses, the largeness of the supply, and the difficulty or impossibility of doing without them in civilised life, the second division I propose is equally well marked by the intrinsic beauty and large money value of the minerals it contains, and the delicacy or difficulty of manipulating with them or preparing them for use.

Again, the minerals in the first division require to be exhibited together, with an ample exemplification of the methods of obtaining them, and the recent improvements in those methods. Those of the second division, on the other hand, must be shown rather with the objects made of them, than with the contrivances by which they are obtained.

The grouping I now propose for minerals and mineral manufactures includes the whole of the Classes I. and XXVII of the Great Exhibition of 1851, and many fragments of other classes besides the numerous collections seen in the foreign department of the geological specimens, minerals, stones and marbles, inlaid work, mosaic, and gems. The two divisions would occupy large but very different spaces, and though they should certainly be near together, they need not absolutely be on the same level or open into each other. Certainly the metalliferous minerals and ores, the mineral fuel, the minerals used for construction, and other collections, must be on a ground floor, but with regard to the second division, all specimens referred to it might occupy galleries above if consistent with the general plan.

It must not be supposed that the first division I propose to make would be without striking effect arising from the nature of the minerals exhibited. Constructions in marble, stone, and slate, and perhaps of brick, might be subservient at once to the general plan of the building and the details of arrangement. Mineral fuel might be brought in to produce effect, and diagrams illustrating methods and processes might with great advantage be accompanied by picturesque views of mining districts and mining operations. Models of apparatus and series of implements and tools adopted and used in mining and quarrying and preparing minerals for the market would properly belong to this department.

I have already alluded to a geographical subdivision by which the collections sent by various countries and districts would be within certain limits exhibited in groups. I am well aware both of the practical convenience and real advantage of this method, but I am satisfied it ought to be subservient to some general plan of arrangement.

To obtain such a series of minerals and mineral manufactures as would fitly illustrate the department, two things are necessary. First a settled and well digested plan, marking out the principal desiderata from different countries and districts and the relative position that each would ultimately occupy in the series. Next, a calculation of the extent and kind of space that would be required for the model Exhibition, and the gaps that may after every exertion be expected to occur. As it is altogether impossible that any first scheme should be perfect and complete, I put forth the plan which on much careful consideration seems to me most desirable, not with any intention or expectation of seeing it approved of and adopted without modification, but that those who have also considered the subject should have some starting point, and be able to say that this or that part of the plan is unpractical or unsatisfactory.

But I do not think a mere plan is sufficient. I have also prepared lists, at present very imperfect, of the various mineral substances used in the arts under the names known in science, in art, and in trade, with particular reference to the plan of arrangement I propose. These or similar tables, modified perhaps in some way, may no doubt be much improved by careful inquiry, and may become the basis of a system, so that a nearly complete list of minerals used alone or in manufactures may be made out. We may thus obtain a series marking with some distinctness the relative position of each country in the department in question at the time of exhibition, the absolute condition of human knowledge in reference to the use of minerals, and, by comparison with the lists published by mineralogists, serving to illustrate the exceedingly small extent to which the varieties of minerals are utilised. Were it not that the animal and vegetable kingdoms, as well as the mineral, are all remarkable for the small number of varieties of structure used by man, in comparison with the almost infinite multitude distributed over and within the earth, it might seem that we were negligent of this great source of wealth. Whether this is so or not will be best seen and proved by a succession of exhibitions, provided that in each an attempt is made to show what is known at the time, and what has been added to knowledge since the last opportunity of courting public attention.

I would urge, then, that in any future arrangement or exhibition, these three principles should be admitted. First—The principle of separating the bulky, more common, and less costly articles of mineral origin or manuufacture, from those which are comparatively small in the quantity obtained, valuable in proportion to their bulk, rare in their distribution, and costly in their preparation and use. Secondly—That raw materials should form, in most cases, the fundamental objects in series illustrating manufactures, and for other uses; and, thirdly, that all the collections of minerals and mineral manufactures from different countries and districts should be placed where they can most conveniently be compared with similar objects.

If these general principles are admitted, we may proceed with advantage to consider what minor divisions will be most advisable. Looking back at the great Exhibition, we shall find that there was little unity of expression in the departments we are considering, and this arose from various causes, which it is unnecessary here to recapitulate. A part of the English collections was in the south-west corner within the building; another part outside, beyond the west end; a third part in the nave; a fourth part in some bays in the northern side of the building; while the foreign collections were, some in the French Department, some in the Russian, and others in the East Indian and American divisions. Not only were they thus dispersed, but the subdivisions in the different countries were by no means the same, and in many cases no grouping at all was attempted.

It has seemed to me, on carefully going over the lists of useful and exhibitable minerals, that they admit of being divided into eight classes, which are marked in the accompanying plan A to G.

TABLE I.

General Sketch of Arrangement of Minerals and Mineral Manufactures proposed to be adopted.

First Division.—Minerals and metals chiefly employed on a large scale in manufactures, and for various purposes:—

Class A.

Metals and Metalliferous Minerals used as Ores.

a. Collections of specimens of useful metals, and ores used for obtaining them.
b. Illustrations of the position of the minerals in the earth.
c. Illustrations of the methods adopted for extracting ores from the earth.
d. Illustrations of the methods for preparing them for sale.
e. Illustrations of the methods adopted for reducing the prepared ores to the metallic state.
f. Illustrations of the manufacture of useful alloys, and samples of alloyed metals.

Class B.

Mineral Fuels.

a. Collection of the various kinds of mineral fuel used in an unprepared state.
b. Illustrations of the position of these minerals in the earth.
c. Illustrations of the methods adopted in coal-mining.
d. Mechanical contrivances occasionally adopted for cleaning, drying, or preparing mineral fuel for sale.
e. Useful mineral substances obtained from mineral fuel by manufacturing processes.

Class C.

Minerals used for purposes of Construction.

a. Collection of the minerals.

1. Hard materials, viz.:—
   - Limestones and marbles.
   - Sandstones, gritstones, and pudding-stones.
   - Slates and slabs.
   - Flag-stones.
   - Granites.
2. Plastic materials, viz.:—
   - Clays.
   - Puzzuolana and natural cements.
   - Materials available for artificial stone.

b. Illustrations of quarrying and other processes for obtaining these minerals.
c. Illustrations of processes adopted for dressing, cleaning, manufacturing, burning, and otherwise preparing them for sale.
d. Collections illustrating their uses, and the constructions prepared from them.
e. Illustrations of methods and contrivances for preserving them from decay.

Class D.

Minerals used without other than Mechanical Preparation for various miscellaneous purposes in the Arts. Exhibited in each case in the natural state, and in the state in which they are used.

1. For grinding, cutting, sharpening, and polishing.
2. For drawing, writing, and engraving.
3. As pigments—for colouring, viz., in dyeing, calico-printing, pyrotechny; for encaustic work, in colouring glass or porcelain; for fixing colours and discharging colours.
4. As food, medicine, or poison; for cosmetics; as fluxes, or in preparing enamel; for mineral manure and dressing land.

Class E.

Minerals forming the essential ingredients in certain simple Manufactures. Exhibited in the natural state, in various processes of manufacture, and as prepared for the market.

N.B.—In this and the last class, the manufactured articles should be exhibited in each case side by side with the raw material.

Second Division.—Minerals and metals chiefly employed for ornamental and decorative purposes, in the fine arts, and for scientific purposes on a small scale:—

Class F.

Gems or precious stones, and precious metals used for personal decoration. Exhibited unprepared and as used in jewellery.

Class G.

Crystalline minerals, gems, and precious metals used in natural philosophy, with illustrations of their chief uses.

Class H.

Crystalline mineral gems and precious metals used in the fine arts, and for decorative manufactures; in sculpture, mosaic and other inlaid work, cameos, intaglios, and for miscellaneous purposes.

Class A would include the metals used in the metallic state, and the various minerals from which metals are actually obtained in the arts. Under this very important head, I should include, 1st, geological sections, illustrating the position of such minerals in the earth, as, for example, the nature of beds and veins of ore, the natural accidents that have occurred to such deposits, the modifications that in the course of time, or by chemical change, have been induced in them, and the usual indications by which the presence of a mineral district may be detected. This would be strictly the geological introduction to a mineral exhibition, and should be confined very strictly to known facts, as distinguished from what are still speculative, although perhaps very important views bearing on the subject.

The next sub-class would include a series, as complete and characteristic as possible, of all minerals of the kind in question—that is, metals or metalliferous minerals made use of in the arts. In this series it would I think be very advisable to leave blanks for known omissions, making out beforehand a list of what ought to be present, and indicating the blanks. In this way a foundation would be laid for a complete museum, that may from time to time receive valuable additions in the event of the building or any part thereof being retained. It would add much to the interest and value of such a series were each group of minerals accompanied by a few lines stating the place at which it is worked for the market, the quantity annually extracted, the price at which the market is supplied, the technical and trivial name, and the chemical composition of the species. The extent of space required for this series would not be large, as the number of the minerals is very limited.

Next should be exhibited models, drawings, and descriptions of mining processes, mining machinery, and other contrivances for extracting ore from the earth; and these should be followed by similar illustrations of the methods adopted for preparing ores for the market, and reducing them to a marketable state. All these mechanical processes should be shown in their reference to the different mining districts of the earth. They would be exceedingly instructive, and mark the progress made since the last exhibition.

Lastly, it might be well to include in this first class of minerals an exhibition of the various metals and metallic alloys in common use, or as prepared for special purposes, and with these the series would naturally and properly close.

It may be well to point out here that as an industrial exhibition ought to differ essentially from a museum, no resemblance to ordinary museum arrangement need be attempted in the carrying out of these suggestions into practice.

Mere mineralogical specimens or technical processes not actually adopted or suggested for adoption on a large scale should be strictly excluded, and if sent should be rejected or made altogether subordinate. Some practical result should be demanded, not that theoretical and speculative treatment or assumed value under certain conditions may not be in the highest degree useful, even for an economic result anticipated, but that in an industrial exhibition what is known and proved should occupy the first and most important position.

An exhibition of mineral fuel I propose to call Class B, and it will properly follow that of ores and metals. Like its predecessor, it admits of subdivisions, which, however, are somewhat different, owing to the nature of the material. To the geological illustrations of the position of coal the series of specimens may succeed, and this, again, may be followed by illustrations of coal mining, methods of ventilating coal mines, contrivances for lighting mines safely, and practical suggestions for diminishing the fearful loss of life in this department of mining. Then may follow preparations of mineral fuel, for packing away the largest quantity of available fuel into the smallest space, and, lastly, the products of distillation of coal, of peat, or of other mineral fuel.

It will be evident that a considerable space must be occupied in the full exhibition of these minerals and the processes connected with them, although probably there will be no question as to who shall send the largest block of coal or the loftiest column of this useful mineral.

In Class C I propose to include all that group of minerals used on a large scale for general construction. Amongst them will be found building-stones and granite, slates, slabs, and flags, road stuff, and other material, of whatever kind that is hard, besides all varieties of clay used for bricks, fire brick, terra cotta, porcelain, and artificial stone. Under the same head would come cements and plasters, and processes for indurating and preserving stone. Together with or besides specimens which would be in all stages of preparation, the methods of quarrying, and also the methods of preparing the material for the market, and the cost of preparation should all be recorded.

The variety of hard stones used for constructive purposes in England alone is extremely great, and the varieties require to be seen to be at all appreciated. Every one knows, now when it is too late, how unsuccessful has been the well meant attempt to select a particularly good stone for the Houses of Parliament, and how little the united science and experience of chemists, geologists, architects, and masons could do fifteen years ago towards discovering the probable effect of a London atmosphere on a particular kind of stone. It remains to be seen whether the attention that has been drawn to the subject and the necessity of some remedial measure will produce the right remedy. No doubt in an Exhibition in 1862 there will be fair examples of stones left unprepared, and of others coated with various preparations, but it is to be feared that another decennial period must pass away before the favourite processes of the present day are fairly tried, and we can determine whether they answer their intended purpose or are, like the many that have preceded them, wanting in some essential character.

It would be a worthy employment of the means at the disposal of the Commissioners for the Exhibition if a selection were made of approved stones, some of them prepared, and other left in their natural state, for the purpose of testing in time the relative value of different stones in London. Either detached permanent constructions in the grounds at their disposal, or portions of that part of the building itself that is intended to remain as a permanent edifice would give ample opportunity for the determination of very important practical questions greatly affecting the beauty and stability of our public buildings.

In a fourth class (class D) I would suggest that there should be brought together a collection of the other minerals used in their natural state in the arts. These form a very large and important group, requiring subdivision. First there are the minerals, such as rough diamonds, emery of all kinds, whetstones of all kinds and polishing powder, (rotten stone and tripoli), employed for the purpose of cutting, grinding, sharpening, and polishing. Next we have lithographic stones, white and coloured chalks, French chalk, slates, and other substances used for drawing, writing, and engraving. Thirdly, there are all those minerals used without preparation, or with only a mechanical preparation as pigments for a direct colour, whether for drawing or painting, or for colouring glass or porcelain, or for coloured fireworks. Amongst these I would include various minerals used for bleaching or discharging colour, and as mordants for fixing colour. The whole form a sub-group which is natural and of considerable interest.

A fourth and last sub-group includes minerals used as food or for medical purposes as poisons, those used as cosmetics, those serving as fluxes in the reduction of other mineral ores or metals, a few that are useful in the process of enamelling and preparing factitious gems, together with others employed in dressing land and acting as mineral manure. A collection of this kind, though apparently miscellaneous, brings into a small space a multitude of minerals which ought to be seen, known, and understood; and which, being thus together, can be compared. Such comparison is in the highest degree favourable for obtaining suggestions as to the new uses of known things; and as in different countries there are certain common things that must be done, and local ways and means of doing them, we may find that some substances that we possess in abundance, and do not use, are really valuable and employed by our neighbours for purposes we have little idea of.

In all collections like those just alluded to there should be great attention paid to connect the raw material exhibited with its state as prepared for use, and, as far as possible, an illustration of the principal uses. It is in this way only that interest is to be given to accumulations of objects which in themselves would inevitably be passed with a mere hurried glance, even by those whose pursuits would induce us to expect a closer investigation.

Under another heading in Class E should be exhibited minerals forming the essential ingredient, in certain manufactures, but not of any use without considerable manipulation and admixture with other substances. A multitude of cases will seem difficult to arrange, except in such a group, minerals having, indeed, little in common, but not being without a capacity of being placed together with advantage. To instance a few, I may refer to the use of plumbago in making crucibles, of asphalte in pavement, of sulphur in the process of vulcanising caoutchouc, of flint in the manufacture of glass, of borax in making false gems, of gypsum and puzzuolana in making certain plasters and cements, of lapis lazuli in making ultramarine, of mercury in silvering mirrors, of the various metals that make important alloys by mixture, and a hundred other cases that would be tiresome to enumerate.

The difficulty in this class would be to exclude, but a line might be drawn to confine the objects admitted to those in which the mineral named was in the strictest sense the modifying ingredient.

In these five classes might certainly be placed almost, if not quite, all the minerals used in the arts on a large scale, but there still remain a considerable number, extremely valuable, and many of them wonderfully beautiful, capable of being worked into ornaments, and used for various purposes, for which there is no known substitute, and for the most part characterised by their crystalline condition. Such minerals are the gems or precious stones, various crystals used for optical and philosophical purposes, and a number of comparatively rare and valuable minerals made use of for artistic purposes.

The minerals thus left occur for the most part not only

TABLE 2.—METALS AND METALLIFEROUS MINERALS EMPLOYED IN THE ARTS AND MANUFACTURES.

Note.—Class B is mineral fuel, and has no representative in the List of Metalliferous Minerals.

	FIRST DIVISION.								SECOND DIVISION.			
	Class A. Metals and Metalliferous Minerals used for the purpose of obtaining the metal.		Class C. Minerals or metals used for constructive purposes, not strictly decorative, whether alone or combined as alloys with other metals.	Class D. Minerals or metals used for sundry purposes.			Class E. Metals and minerals forming the essential ingredients in sundry manufactures.		Precious Metals and Minerals.			Principal Sources of Supply.
	Chemical state.	Technical name.		Grinding. Polishing. &c.	Colouring purposes in dying, colouring glass and porcelain, pigments, &c., and for bleaching.	Sundries. Food and medicine, cosmetics. Fluxes to reduce enamel.	Name of mineral.	Manufacture.	Class F. Employed for personal ornaments, and purely decorative purposes in an unaltered or natural state.	Class G. Employed for sundry scientific operations and experiments, or processes in physical science.	Class H. Employed for sculpture mosaic, and other inlaid work, and generally in the fine arts and decorative manftrs.	
GOLD	Native.	Native gold.					Gold.	Plating. Coinage. Gilding.	Gold.	Gold.	Gold.	Australia. California. Siberia.
PLATINUM	Native.	Native platinum.					Platinum.	Chemical works utensils. Coinage.	Platinum.	Platinum.	Platinum.	Brazil and Peru.
PALLADIUM	Native.	Native palladium.					Palladium.	Plating.			Palladium.	Brazil.
RHODIUM	Native.	Native rhodium.					Rhodium.	Pen-nibs.				Peru.
IRIDIUM	Native.	Native iridium.					Iridium.	Pen-nibs.				Ural Mountains.
SILVER	Native. Sulphuret Chloride.	Native silver. Vitreous silver. Black silver. Ruby silver. Horn silver.	Silver.				Silver.	Various articles of domestic use. Coinage. Plating.	Silver.	Silver.	Silver.	South America, West Coast, and Mexico. Saxony and Hartz. Spain. Norway. Russia.
MERCURY	Native. Ditto, with silver Sulphuret.	Native mercury. Native amalgam. Cinnabar.			Cinnabar.	Native mercury. Calomel.	Mercury.	Silvering for mirrors.		Mercury.	Native amalgam.	Idria. Peru. Almaden. Chili. Palatinate. Spain. California.
COPPER	Native. Sulphuret Oxides Carbonate. Sulphate. Silicate.	Native copper. Vitreous copper. Copper pyrites. Grey copper ore. Red copper ore. Black oxide. Malachite.	Copper.		Oxide copper.		Copper. Oxide of copper.	Brass (Zinc) Bronze } Tin. Bell metal } Tin. Speculum metal } Tin. German silver (nickel). Verditer.	Dioptase. Euchroite. Azurite. Malachite. Chrysocolla.	Copper.	Copper. Bronze. German silver. Malachite.	Cornwall, Devon, and Wales. Cuba. Saxony. Silesia. China. Brazil. Australia. N. America. L. Superior. Australia. Spain. Ural Mountains. Cape of Good Hope.
NICKEL	Arseniuret.	Copper nickel.					Copper nickel.	Nickel.			German silver.	Saxony. Bohemia. Styria. China.
COBALT	Arseniuret. Oxide. Arseniate.	Arsenical cobalt. Bright white cobalt. Cobalt bloom.					Arsenical cobalt.	Zaffre. Oxide of cobalt. Arsenic preparations.				Germany. Norway. Ural Mountains. United States.
IRON	Sulphuret. Oxides Carbonates Phosphate. Chromate. Silicate.	Magnetic oxide. Micaceous iron. Specular iron. Red hæmatite. Brown hæmatite. Spathic iron. Clay ironstones. Pisolite. Vivianite. Jenite.	Iron. Steel.	Red hæmatite.	Umber.		Iron pyrites. Iron oxide. Chromate of iron.	Sulphur. Chromate of potash.	Iron (fine castings).	Lodestone	Iron. Steel.	England, Wales, and Scotland. Ireland. France. Elba. Norway. India. Canada. United States. Styria and Carinthia. Nassau.

LEAD	Sulphuret. Carbonate. (Phosphate, Molydate,)	Galena. Cerusite.	Lead.	Carbonate of lead.	White lead.		Lead	Oxide of lead. Acetate of lead. Chromate of lead.		Lead.		England, Wales, and Scotland. France, Ireland, and I. of Man. Spain. Siberia. Saxony. Hartz. Belgium. United States.
TIN	Oxide. Sulphuret.	Tin ore. Bell metal ore.	Tin.	Tin putty.			Tin.	Cases for holding colours. Backs of mirrors (with mercury).		Tin.		Cornwall. Banca.
ZINC	Sulphuret. Carbonate. Oxide. Silicate.	Blende. Calamine. Electric calamine.	Zinc.				Zinc.	Brass (with copper). Zinc. Zinc white. Sulphuret of Zinc.		Zinc.		England. Belgium. Rhenish Prussia. Carinthia. Silesia. Poland. China. United States.
CADMIUM	Sulphuret.	Greenockite.					Greenockite.					Scotland.
BISMUTH	Native. Sulphuret.	Native bismuth. Sulphuret of bismuth.	Plumbers' solder.				Bismuth.	Plumbers' solder.				Saxony.
ANTIMONY......	Sulphuret.	Grey antimony.				Grey antimony.	Sulphuret of antimony.	Hard pewter. Britannia metal. Type metal. Yellow oxide, medicine, fireworks, enamel, porcelain.				England. France. Borneo.
ARSENIC	Native. Oxide. Sulphuret	Native arsenic. White arsenic. Orpiment. Realgar.			Realgar (fireworks) Orpiment, staining wood.	White arsenic (poison) Realgar	Arsenic. Orpiment.	Shot metal. King's yellow.			Realgar.	Transylvania. Hungary. Turkey. China. America.
MANGANESE ..	Oxide .... Silicate. Manganite.	Pyrolusite. Wad. Manganese spar. Psilomelane.			Wad, coarse pigment glazing pottery ware. Oxides of manganese (glass) (dyeing) (bleaching) Manganese spar (glass & pottery)	Wad & other oxides of manganese as fluxes.	Wad. Peroxides of manganese.	Umber. Bleaching powder.	Manganese spar.	Oxides of manganese (Wad) (Psilomelane)	Manganese spar.	England and Scotland. Germany. France.
CHROMIUM......	Chromate of iron	Chromite.			Oxide of chromium (glass and porcelain) (dyeing and calico printing)		Chromate	Chromate of potash. Chromate of lead. Oxide of chromium.				Scotland. N. America. France. India.
MOLYBDENUM	Sulphuret.	Molybdenite.			Molybdenite (porcelain)							
URANIUM	Oxide.	Pitchblende.			Pitchblende (porcelain)							
TITANIUM	Oxide.	Rutile. Anatase.			Rutile (porcelain)		Rutile.	Enamelling artificial teeth.				
TUNGSTEN......	Tungstic acid. Tungstate of iron (or lime) and manganese.	Wolfram.			Tungstic acid (dyeing)		Various tungstates.	Tungstic acid.				
ALUMINIUM	Fluoride.	Cryolite.	Aluminium.						Aluminium.	Alumin.	Alumin.	Greenland.

TABLE 3.—EARTHY AND CRYSTALLINE MINERALS NOT METALLIFEROUS EMPLOYED IN THE ARTS AND IN MANUFACTURES.

NOTE.—Class A includes only metals and ores, and has therefore no representative in this list.

FIRST DIVISION. SECOND DIVISION.

	CLASS B. Minerals used as Fuel.	CLASS C. Minerals used for Constructive Purposes not strictly decorative.		CLASS D. Minerals used for sundry miscellaneous purposes.				CLASS E. Minerals forming the essential ingredients in sundry manufactured articles.		Gems, precious stones, precious metals, and sundry minerals.			PRINCIPAL SOURCES OF SUPPLY.
		Hard.	Plastic.	Grinding, cutting, sharpening, polishing, and other similar purposes.	Drawing, writing, engraving, &c., and other art purposes.	Pigments, and minerals used in dyeing, calico-printing, colouring glass & porcelain, and fixing or discharging colours.	SUNDRIES. Food and medicine, cosmetics, &c., mineral manure, fluxes.	Name of minerals used.	Name of manufacture.	CLASS F. Used for personal decoration, and as gems for ornament only.	CLASS G. Used in optics, natural philosophy, and various scientific operations, and manufactures.	CLASS H. Used for sculpture, mosaic, cameos, and intaglios, and generally in the fine arts & for decorative manufacture.	
CARBON MINERALS	Anthracite Coal .... Lignite......	Cannel coal.		Diamond. Graphite.	Graphite.	Bitumen.		Graphite. Coal. Amber. Asphalte. Mineral pitch.	Crucibles. Gas, coal tar, &c. Lamp black. Pavement. Artificial fuel.	Diamond. Amber. Jet.	Diamond. Amber.	Jet. Diamond. Cannel coal. Amber.	
SULPHUR						Sulphur.	Sulphur, medicine.	Sulphur.	Gunpowder, vulcanising caoutchouc.		Sulphur.	Sulphur.	
QUARTZ MINERALS		Quartite. Millstone. Gritstone. Sandstone. Flint. Flagstone.		Grindstone. Scythestone. Touchstone. Honestone. Tripoli.			Sand, manure.	Quartz sand. Flints. Buhr stone. Flints (burnt).	Glass. Water Glass. Mill stones. Porcelain.	Amethyst. Rock crystal. Cairn gorm. Cornelian. Onyx. Sardonyx. Prase. Chrysoprase. Agate. Heliotrope. Jasper. Cat's-eye. Opal. Avanturine.	Brazil pebble Agate.	Crystal. Cornelian. Onyx. Sardonyx. Agate. Jasper.	
ALKALINE SALTS						Sal ammoniac. Natron.	Sal ammoniac. Nitre. Rock-salt. Natron. Borax.	Sal ammoniac. Nitre. Salt. Natron. Borax.	Soldering metals. Gunpowder & fireworks, glass making. Soap making. Paste for false gems.		Rock salt.		

BARYTA MINERALS													
STRONTIA MINERALS													
LIME MINERALS.		Marble. Compact limestone. Oolite. Chalk. Alabaster. Magnesian limestone.			Chalk. Lithographic stone.		Chalk, manure Lime sand, manure. Phosphate lime manure.	Septaria. Gypsum. Lias lime. Coprolites or phosphatic nodules.	Cement. Plaster. Hydraulic cement. Artificial mineral manure.	Vulpinite. Satin spar.	Iceland spar. Selenite.	Marble. Fluor spar. Alabaster.	
MAGNESIA MINERALS (not Silicates)		Dolomite.	Meerschaum					Magnesite.	Meerschaum.				
ALUMINA MINERALS (Alumina, Hydrates, Sulphates, &c.)				Corundum. Emery.		Alum.				Ruby. Oriental sapphire. Oriental topaz. Oriental amethyst. Oriental emerald. Turquoise.		Prehnite. Agalmatolite.	
ALUMINOUS SILICATES		Slates. Slabs. Granite. Felspar.	Kaolin. China clay. Pottery clay. Pipe clay. Brick clay.	Polishing slate. Mountain meal Pumice.	Slates for drawing. Slate-pencils. Black chalk.	Ochres. Umber. Terra di Siena. Fuller's earth.		Red ochre. Bituminous shale. Puzzuolana.	Red chalk pencils. Bitumen, &c. Hydraulic cement.	Cyanite. Garnet. Iolite. Emerald. Beryl. Euclase. Moonstone. Labradorite. Amazon stone. Carbuncle.	Garnet.	Christolite. Garnet. Emerald. Beryl. Labradorite. Lava.	
NON-ALUMINOUS SILICATES		Potstone. Steatite. Talc. Serpentine.			French chalk.	French chalk.	Steatite, food.	Steatite.	Rouge.	Olivine. Peridote. Chrysolite. Zircon. Hyacinth.	Talc. Chrysolite. Zircon.	Steatite. Serpentine.	
SILICO-ALUMINATES, FLUATES, &c.								Mica. Lapis lazuli.	Window light. Ultramarine.	Topaz. Tourmaline.	Topaz. Tourmaline. Mica.	Lepidolite. Lapis lazuli	
ALUMINATES ...										Almandine ruby. Spinelle. Balas ruby. Chrysoberyl.			

In consequence of Professor Ansted having been prevented by weather from reaching England in time to complete these tables, they are necessarily printed in a somewhat imperfect state, but still they serve to give a general idea of the principle of classification suggested.—[ED. *J.S.A.*]

in comparatively small quantity, but are greatly limited in their distribution. Thus, whilst coal in its various forms is happily distributed over the earth in large quantities, at intervals not very remote, diamond, the crystalline form of the same element (carbon), is one of the rarest, as it is the most costly, substance in nature. So also common clay, sand, and limestone, which are the component parts of every rock mass in all parts of the world, have, in their crystalline state, as ruby and sapphire, amethyst and opal, iceland spar and alabaster or statuary marble, totally distinct characters, values altogether disproportionate to the elements they respectively represent, properties to distinguish them from all other substances, and a rarity in their distribution singularly contrasted with the abundance of the commoner and more familiar forms by which they are known.

As it would manifestly be absurd to associate together substances so utterly unlike as coal and diamond, Iceland spar and Portland stone, millstones and Brazil pebbles, slates and rubies, yellow copper ore and encrusted work in polished malachite, it becomes necessary to establish a very decided line of demarcation, if we would fitly arrange an Industrial Exhibition. I propose, therefore, that a separate division should be established for ornamental, decorative, and other work in costly minerals, and that these should be kept apart from the general series, and be regarded as quite distinct. It seems to me that the whole might conveniently form three comparatively small classes: — one of them limited to gems and precious minerals, as used for personal ornament; a second including all those minerals used, on a small scale, in various departments of science, and some finer manufactures; while a third would refer to decorative manufactures and the fine arts. Of these the two first sufficiently explain themselves, and in the third it would not be difficult to effect a sub-division, according to which the uses of minerals for decorative art might be recognised and illustrated. The exquisite specimens of mosaic, both Florentine and Derbyshire—the encrusted work in malachite, from Russia—fine porphyry vases—sculptures in Egyptian—alabaster and marble, and other grand and beautiful work in mineral manufactures, would then be seen not far removed from the diamonds, rubies, and other precious stones, while the stonework and slate, the bricks and tiles, the manufactures in fire-brick, and the draining-pipes and earthenware goods, would be removed from an association which adds to the interest of neither.

I feel the more at liberty to compare what I am satisfied might be done, and what may in some measure be effected in the next Exhibition with the weaknesses of the last Exhibition, because I had myself much to do with the original suggestions of the sub-divisions as arranged beforehand, and with the two classes then entitled minerals and mineral manufactures. My experience then obtained, and the interest I have since taken in the subject, must serve as my excuse for thus early requesting attention to it.

At the risk of being tedious, I must once more request attention to the salient points of the arrangement I hope to see adopted. They present two principal features:— First, that of combining the foreign with the British collections, and next, that of combining the manufactures with the raw material; on the other hand, they tend to separate the useful minerals, employed on a large scale, from the ornamental minerals, used for personal and other decoration, and on a small scale. In this respect they admit of arrangement in an easier way, with much more striking effect, and, I venture to submit, with much greater prospect of a useful and lasting result than was the case in the last Exhibition.

One word now in respect to the advantage to be derived from exhibiting series such as have been alluded to, and the mode in which they must be obtained for exhibition. The useful minerals are, as I have already mentioned, comparatively few in number. They are also remarkably limited in distribution, some being really confined to particular districts, others only known in the countries in which they happen to have attracted attention. The localities in which fine china and porcelain ware are manufactured are even now singularly few in number; each place has its own branch of manufacture, and each country that manufactures, also imports or ought to import largely from the others. The manufacture in question is almost beyond others a mineral manufacture. The materials used are china clay, china stone, flints, and some other minerals for the body, metallic oxides and other minerals for the colouring matter, and certain minerals for the glaze. The manufactured clay is burnt with mineral fuel, and the furnace is constructed of fire-brick. Now, in all these uses of minerals, each country has its own method, but in exhibiting and comparing porcelain, the varieties of mineral used have hardly been enough considered, and the causes of essential differences have escaped notice. The advantage of showing the materials and progressive steps of manufacture side by side, so as to enable the British manufacturer to see and understand the cause of the difference between Staffordshire and Worcestershire goods, and those from Sèvres and Dresden, from China and Japan, is not trifling, and all parties would be benefited by the interchange of knowledge.

But this illustration in the case of porcelain is but one example out of a number equally good. Other mineral manufactures are capable of illustration in a similar way, and other manufacturers might avail themselves of opportunities offered for comparing methods. These opportunities have not been afforded yet by any of the great Exhibitions, for in our own of 1851 it was not possible, as we have seen, to make this comparison, while in that of Paris which followed, no attempt at general arrangement seems to have been made.

It may be feared that even now there is neither time nor opportunity for a general principle of classification to be carried out in the coming Exhibition. I trust it is not so, and that on the other hand method will be recognised as the great and ruling characteristic. To enable any plan to be carried out properly, two things should be done. There should be a definite scheme for each department, and a calculation of the nature and kind of space required in every case. Careful lists of desiderata should be prepared beforehand, and direct solicitation made in the proper quarters for the particular objects required and no other. Where necessary this solicitation must be personal, and must ensure the needful supply of the progressive steps of manufacture. In every department there should be one ruling power entrusted to carry out a plan, and not merely to accept and place everything sent.

It will inevitably result that should any systematic plan be adopted, different departments will overlap—that, for example, the progressive and illustrative Exhibition of porcelain in the department of mineral manufactures will be to some extent a repetition of what will be exhibited in ceramic manufactures, and so in other cases. I do not think this any objection in principle, and I do not believe it would involve any difficulty in pactice. Certainly it would not cause the vast consumption of space which is sure to be occupied in the absence of system by an indefinite repetition of similar objects, many of them not remarkable for novelty or excellence. The permission to exhibit might be accorded to towns or districts, or countries to a limited extent (a certain number of superficial yards), with the understanding that certain manufactures or raw materials of the best kind there obtainable should be forwarded by a given time. The placing and arranging of these should be confided to appointed and responsible officers. Should it happen that the quantity promised is not sent, or the quality is not approved, there would be little difficulty in most cases in replacing the articles expected by some others, but if not, it would be better that blanks should be left than that rubbish should be exhibited.

It will be evident that the idea of arrangement I suggest supposes an active and energetic officer understanding his subject to superintend each department. The experience of former occasions proves that such persons are to be found when required, but to be of much use, their work must commence much earlier on this occasion than before, and the method adopted be to some extent systematic, throughout the whole Exhibition. I have not ventured in this communication to offer remarks on other departments than those in which my experience has been chiefly gained, but to some extent what I have said is generally applicable, and the principles I advocate will hold good as much for one department as for another.

The accompanying tabular forms are drawn out with a view to show in outline how far the minerals used in the arts, and the mineral manufactures they are employed in, admit of being systematised. With some additional trouble, and the assistance of those who are directly concerned in the various departments, it would be possible so far to complete them as to render them useful in carrying out a plan like that I have proposed. Without some tabular views of the kind, I hardly think that a proper system could be devised.

DISCUSSION.

Mr. HENRY COLE, C.B., remarked that it must be gratifying to the Society that the first paper read upon the approaching International Exhibition should have been brought before it. He hoped this was only the first of a series of discussions upon this important subject. This Society, on the present, as well as on the former occasion in 1851, after a great many difficulties, had succeeded in fairly launching a great Exhibition. He was sorry Professor Ansted was not present, because the observations he should feel it his duty to make would be such as he should like to have heard answered by that gentleman. He should regret that a paper like this should go forth with any kind of authority from the Society, as setting forth principles on which it might be desirable to carry out the mineral portion of the Exhibition. He collected from the paper that the Commissioners and their *employés* were to do all the work and the exhibitors none. There were many passages which implied that some kind of despotism was to be exercised over everything that was brought to the Exhibition; that the exhibitors themselves were to come like lambs, and place their objects before the Commissioners, and that the Commissioners were to engage the services of some eminent despotic scientific gentlemen, who were to exercise unlimited powers. He observed that towards the end of the paper that principle was distinctly laid down—that the placing and arranging of these objects should be confided to appointed and responsible officers. Having had some considerable experience in the first Exhibition, he would say that the most suitable persons in his opinion for arranging the articles were the exhibitors themselves to whom they belonged. If he were an exhibitor of mineral manufactures, he should prefer to have the responsibility of disposing of them himself, rather than entrusting them to any officer of the Commission. He believed whatever success attended the first Exhibition resulted mainly from a steady maintenance of the principle of non-interference. It would have been quite impossible on that occasion—and he was certain it would be equally so on the present—for any body of Commissioners or scientific men to do the work which the manufacturing interests of the country could do far better for themselves. Let them try and realise what an Exhibition was. Objects were brought hastily together, often under great difficulties, and under very different conditions from those which applied to museums. He should have been disposed to have taken but little exception to the paper if the suggestions had been confined to the arrangement of the mineral productions only, and not the manufactures. Indeed, he thought it quite consistent that some degree of censorship should be exercised as to whether certain objects should be accepted or rejected, but to imagine that they would dip their hands first into a French package, then into a Russian package, and then into a British package, and from each pick out the particular articles they wished to exhibit, and bring them altogether, was quite absurd. He thought it was a complete dream, the attempting to manage an Exhibition except by the voluntary labour of all the exhibitors. They would recollect the very remarkable state of things in the Exhibition of 1851, when five or six days before it opened everything seemed like chaos. People were going about here and there like bees in a hive; nobody looking on could tell what they were doing, or where they were going. They had in that building 14,000 people at once, all actively employed, and each doing his own work. The afternoon before the opening, the Queen expressed her great surprise at the confusion apparently existing; but the next morning by eleven o'clock the whole place was like a drawing-room. And why? Simply because 14,000 people were each doing his own particular work, and doing it in the best possible way. If, instead of these 14,000 simultaneous workers, the same task had been confided to a staff of officers, however competent, what confusion it would have created. It appeared to him perfectly chimerical to expect to get the work of an exhibition done in that way. No doubt something was to be said upon the general principle of arrangement whether it should be geographical or scientific. No doubt, in arranging a museum they would in all cases bring like things together, and they would have plenty of time to do the work; but in an Exhibition which was to last only for a few months, and where there were a multitude of interests, unless they kept those interests somewhat together—for instance, unless they could keep the French portion of the Exhibition together, and the German portion also together, what confusion there would be? There was no doubt that each national collection would be exhibited more or less with a certain amount of national peculiarity. If all were mixed together, the nationality, which was a matter of interest in itself, would be entirely lost. In saying this he did not mean to say that they should place French machinery in motion with Lyons silks or Sèvres china, but as far as possible the principle of nationality should be kept in view, and the exhibitors of each country should be entrusted with the management of their own articles. It would be within the recollection of the members of the Society, that soon after the Exhibition of 1851, it was felt that a system of classification, based upon objects, presented such inconveniences that a different arrangement was proposed—that instead of taking objects they should take producers. They would see how rational that was. They wanted the objects, but they must first find the men who produced the objects, and it was indispensable that the producer of the article should be in charge of his own goods. He laid it down as a canon that if they wanted an Exhibition they must charge the exhibitor with the arrangement of his own property, and the rule must be observed that the goods of an exhibitor should not be divided unless he consented to the division. If the manufacturers of Coalbrookdale sent a large ornamental statue for exhibition in some portion of the building, that would be an exception. Upon the whole, he thought the classification in 1851 was as reasonable as might be expected, though it might perhaps be a little amended; but he did not think it was much amended in the Paris Exhibition in 1855. The scientific advisers of the Commissioners in 1851, however, did what Professor Ansted advised them—they took the objects and did not take the exhibitors. Some instances arose in which the classification was completely violated. As an illustration of this, he would take the manufacture of colours, which were made from mineral, vegetable, and animal substances; but all came under the class of pigments. According to the classification they ought to have cut up that manufacture into three or four pieces, animal colours with animal substances, vegetable colours with vegetable, and mineral colours with mineral; but that was not done, simply because the exhibitors would not allow their articles to be so dealt with. He thought the great principle to be followed in this matter was to make it as strongly as possible the interest of exhibitors to bring forward their goods. Why did they send their goods to exhibitions? Simply to show what they had done during the last ten years, and to illustrate the progress which had been made during that time. If the Commissioners attempted to do the work of the exhibitors they would not succeed in doing it well; the more they left individuals to do their own proper work, the more successful he believed the approaching Exhibition would be.

Mr. Robert Hunt, F.R.S., said the fixedness of the impressions upon his mind, with regard to the Exhibition of 1851, led him to offer a few remarks upon this subject. Mr. Cole had, he thought, very correctly objected to the system of classification which had been proposed by Professor Ansted. He (Mr. Hunt) did not believe, from his own experience, that it could be practically carried out. At the same time he could not but admit that there was some advantage in starting with a fixed plan which was based upon scientific and educational principles. He was perfectly satisfied that if, in the Great Exhibition of 1851, they had had more time to do the work, the classification of the minerals there would have been much improved. It would be remembered that in the first instance there was some doubt whether raw materials should be exhibited or not, and on that account that portion of the Exhibition was driven off till the latest moment. Professor Ansted had, in his opinion, said truly it was most desirable to exhibit the raw material, the processes of manufacture and the results of manufacture, as much as possible together. To a certain extent that could be done, and was done in some degree in the Exhibition of 1851. Professor Ansted had, he thought, alluded too slightingly to the collection of iron ores then shown. A more perfect collection of the iron ores of Great Britain than that exhibited by Mr. Blackwell, in 1851, could not be brought together. Immediately in connection with the manufactures of iron, might be placed illustrations of the processes of manipulation of the metal, not merely into pig-iron, but also into bars and rails. Up to that point they could comprehend the manufactures in one particular class; and it appeared to him that in carrying out the Exhibition of 1862, they might render it more educational than that of 1851 was, by determining in the first instance to obtain from all the mining districts of the United Kingdom specimens illustrating the productions of each particular district, which might be systematically arranged, and in connection with them there might be exhibited illustrations of the processes of mining, which was not the case in 1851. He thought it was an important thing at this early period, when they had time for doing the work properly, to endeavour to get foreign governments to furnish models of the machinery employed in their mining operations. Nothing could be more valuable or instructive to the mining population of this country than bringing together such a class of models. He was quite sensible of the wide difference there was between an exhibition of this kind and a museum, and he was aware that in carrying it out they had not merely to consider its educational but its popular character, for it would be visited by many thousands. He thought men of science might be very usefully called upon to consult with the Commissioners as to the classification of the objects, by means of which the approaching Exhibition would not only be made popular, but also an educational and instructive one to the country.

Mr. Thomas Jones, as an exhibitor in 1851, would remark, that in the department in which he was interested there was great dissatisfaction amongst the exhibitors with regard to the jurors appointed for the supervision of it. He thought in future exhibitions the appointment of the jurors should be made by the exhibitors themselves, if rewards and commendations were to be issued at all. The sort of despotism which had been alluded to was what he (Mr. Jones) would not submit to again. He thought many of the suggestions of Professor Ansted might be usefully communicated to intending exhibitors in the different classes, and if those classes were arranged under the superintendence of a qualified person, appointed by themselves, there would be carried out that scientific classification and educational arrangement which was advocated by Mr. Hunt.

Mr. N. S. Maskelyne concurred to a great extent with what had fallen from Mr. Cole, and he believed a scientific arrangement of the various articles exhibited could be more conveniently carried out in the way that gentleman had suggested than by the plan laid down by Professor Ansted, if left very much, though not entirely, to the persons who furnished the articles for exhibition. With regard to the nature of the exhibition they should endeavour to obtain, he thought a proper representation of the mining wealth and industry of the country ought to be made a prominent feature, and the value of such an exhibition would be enhanced by representations of the machinery employed in such operations at the present period. With regard to minerals, he might remark that there was scarcely a capital in Europe which did not possess valuable collections of mineral products—each one rich in some particular class of mineral, which would be highly interesting if brought before a larger world than that which generally saw them. He thought the governments of those countries might readily be inclined to lend their most choice collections for the approaching Exhibition. They might, with a little management, borrow the unique collections of minerals which enriched such capitals as St. Petersburgh, Vienna, Madrid, Turin, &c., and he believed all those collections could be brought together so as to form a leading feature in the forthcoming Exhibition. The question was, how was this to be done? The best means he could suggest was to communicate with those who had charge of these collections, and he did not know a person more qualified for that task, by his European reputation, than Professor Miller, of Cambridge, whose large knowledge of such collections, and where they were to be found, rendered him the most eligible person to make the communications he had suggested. The next feature of the Exhibition should be the great mining interest, which was the substratum of every great manufacturing industry in this country, and in the world. He differed from the so-called scientific arrangement of this department, suggested by Professor Ansted, for the reasons which had been so well explained by Mr. Cole. The question was, how were they to secure the co-operation they wanted, not the co-operation of the scientific man, but of the producer, and whilst he had taken upon himself to suggest the name of a gentleman in connection with the mineralogical collections, he would add the name of another whose reputation and standing as a mining engineer were of the highest order, viz., Mr. Warington Smyth, and he had no doubt Mr. Hunt was himself in a position to render valuable aid in this matter. He believed by such means as he had suggested, they would be able to bring together in the approaching Exhibition such a collection of mineral treasures as the world had never seen. With regard to the arrangement of such collections, he considered that to be a matter of secondary importance. The great thing was to get the collections together. He believed such an exhibition in this department would form a most attractive feature in the great national undertaking in which they were now embarked.

Mr. P. L. Simmonds said, that notwithstanding the objections which had been urged by Mr. Cole, he did not think there were insuperable obstacles to the consideration and possible adoption of some of the suggestions of Professor Ansted, which would materially enhance the forthcoming Exhibition in an instructive point of view, without detracting at all from its general attractions and commercial success. The adoption of some of the suggestions could be carried out without either offending the exhibitors, or withdrawing the arrangement or custody out of their hands. The International Exhibition of 1862 would differ from the previous ones in many respects, especially in the experience gained—the new features introduced, and in that it was intended to measure the progress and improvement that had been made in various departments by comparison with the past. Inasmuch as the Commissioners already drew out classifications, arrangements, and general instructions for intending exhibitors, there seemed nothing unreasonable in their also offering some suggestions as to the mode in which specimens or collections might be best shown. Without breaking up geographical or special local collections desirable to keep together, it was still possible to obtain smaller duplicate specimens which could be arranged in general groups, so as to afford easy comparisons of the nature and qualities of ores, metals, fuels, building stones, and partially manufactured products from different localities in the particular class under discussion, and very many others. Such an arrangement would greatly facilitate easy reference, and promote the interests of manufacturers, who, in 1851, had the greatest trouble in making an inquisitive survey over the various bays, to ascertain what was shown of the particular kind in which they were most interested. How desirable, for instance, it would be to show not only the samples, but the sources of the various oils, vegetable and mineral, together with their applications; to compare also the coal of different parts of the world, seeing how important this fuel was, now that ocean and river steam communication, railroads and stationary engines were so widely extended. The mineral collections of the Exhibition of 1862 promised to be of a highly important character, looking at the great discoveries of gold, silver, mercury, malachite, sulphur, &c., in new quarters since 1851—the widely extended uses of iron, the manufacture of aluminium and other metals, the extended production of and trade in nitrate of soda, borax, &c., and the large application of mineral manures to the soil. There were many countries quite unrepresented on the last occasion, and there were many eastern countries with which we had of late years entered into intimate trade relations, which could exhibit much that was novel and useful; and these products it would be highly desirable (especially as regarded raw materials) to place, if possible, in juxtaposition with those of European countries.

Mr. THOMAS HILTON remarked that there was one point in reference to Professor Ansted's classification of mineral products which it was probable the Exhibition of 1862 would suggest. There was a material only recently brought into use, called the Torbane Mineral, from which two descriptions of oils were manufactured—one for lubricating, and the other for burning purposes, besides a solid, inodorous, translucent substance suitable for the manufacture of candles. Supposing the classification of Professor Ansted were adopted, the owner of the Torbane Mineral would find his production, which was in the natural state a black, coal-like substance, side by side with the elegant paraffine candles. The same remark might apply to the tarry products derived from the manufacture of gas, which were employed in three or four different manufactures; and when they came to the colour trade, the remark applied with still greater force. In this case they had a combination of animal, vegetable, and mineral products, and in that instance such a classification as Professor Ansted proposed could not be adopted.

Mr. HARRY CHESTER had listened with interest to Professor Ansted's paper, and also to the observations which had fallen from the different speakers, though he could not but express his regret that such a paper had been read at this especial period. It seemed to him that it should have been read either a great deal earlier or much later; in the latter case as a criticism upon what was past, or in the former with the view of influencing the decision of the Commissioners for the Exhibition as to what should be done. All he could say was, that the management of this great undertaking had been entrusted to five gentlemen well qualified in all respects for the duty. A long period had elapsed since they were asked to undertake that task, and many months had passed since they had publicly signified their acceptance of the trust. It was not to be supposed that during all that time they had allowed their minds to lie idle upon the great subject of classification. Those gentlemen were connected with the Great Exhibition of 1851, and they knew that the managers of that exhibition had recorded their experience in the most careful manner, and had recorded also suggestions for improvements in the future. They had, therefore, on entering upon their duties not only a complete record of what was done in 1851, but also of what in the judgment of men of experience might be better done in 1862. He, therefore, could not conceive that so important and fundamental a question as that which they were now discussing had not been already decided upon by the Commissioners; and if that were the case, any suggestions of this kind, put forth at this stage, might only tend to embarrass them. There was to his mind considerable difficulty in carrying out the scientific arrangement which Professor Ansted suggested. All who heard him (Mr. Chester) would, he was sure, give him credit for entertaining an anxious desire that the Exhibition of 1862 should be of as educational a character as possible; but he was convinced that in order to make it educationally useful, they must in the first place make it successful commercially. The first thing to be done was to obtain the co-operation of the exhibitors, and the next thing was to present the objects sent for exhibition in a popular and interesting aspect. Let them make it as philosophical and as educational as they could, but they must not sacrifice commercial success to any theories of philosophy or education. He had the fullest confidence that in the hands of the Commissioners, the forthcoming Exhibition would be a great improvement upon its predecessor of 1851.

Mr. WATERHOUSE HAWKINS entirely sympathised with the observations of Mr. Chester as to the measure and style of congratulation that ought to be afforded to the Society on account of the first paper upon this subject having been addressed to an audience in this hall. It could not fail to give an impression that it came in some degree with the Society's sanction, and he thought it was to be regretted that the paper ignored the two essential features of the coming Exhibition, viz., internationality and the individuality of the exhibitors themselves. The mere announcement that it was to be an International Exhibition would create the desire in each nation to exhibit the best things they possessed, and these would be brought as voluntary offerings from the competitive spirit which such an exhibition was calculated to create. Thus every nation would make the best show it could, provided always that there was no scientific despotism established for the arrangement of the productions. Not that he undervalued scientific classification, and nowhere would this be seen more perfectly carried out than in our national mineralogical collection in the British Museum. They had there an illustration of the manner in which science laid forth those treasures of the earth for educational purposes. But an exhibition of the character now contemplated was mainly intended to stimulate the industrial energy of the whole world. By his experience of past exhibitions, and having had the pleasure of serving under Mr. Cole, in 1851, he was convinced of the entire practicability of that gentleman's observations that evening. The Exhibition should be carried out without coercing and dragooning the exhibitors, or he was certain there would be a failure in 1862 which did not appear in 1851.

Mr. DAVIS, as being connected with one of the largest mineral properties in the kingdom, would express his thanks to Professor Ansted for his paper, for the simple reason—if for no other—that it had ventilated the subject. If the Commissioners could be induced to issue some general statements of the course they intended to pursue, it would be a great advantage to intending exhibitors. He thought the proceedings of the Royal Agricultural Society afforded a good example to be followed in this case. In an Exhibition they wanted not science alone, but science combined with practice. As a practical man, he agreed with the remarks of Mr. Cole. No exhibitor in the iron or coal trade would consent to send his materials to be dealt with by a scientific officer just as it pleased him. Each person would say he knew best what to exhibit and how to exhibit it. They could not suppose that men went to the trouble and expense of preparing articles for exhibition merely for the sake of science. It was for the sake of profit, and they exhibited articles which they thought would catch the public taste, hoping to repay themselves tenfold for the expense they had been at. As one interested in manufactures, he protested against articles being handed over to scientific men for arrangement. Exhibitors would, of course, be happy to conform to all the general regulations, but let them be allowed to exhibit their goods in their own way.

Mr. Battley apprehended that the Commissioners for the Exhibition of 1862 were in no way pledged to the suggestions contained in Professor Ansted's paper. He had no doubt that every opportunity would be offered to exhibitors to display their articles in the best manner.

Professor Tennant was sorry Professor Ansted was not present to answer some of the observations which had been made. Much valuable information had been brought before them in this paper, but they were in no way bound by the suggestions made, for they only amounted to suggestions. With reference to the classification of minerals in the forthcoming Exhibition he did not anticipate any failure, if it were left to the judgment and perseverance of the exhibitors themselves. He agreed with many of the remarks of Mr. Cole, who had a large experience in these matters. He (Professor Tennant) was decidedly favourable to the illustration of the processes of manufacture from the raw material up to the finished article; and however often these might be repeated they would suggest ideas of improvement to manufacturers. With regard to the practical benefit of these exhibitions, he could mention the fact that in 1851 a large iron master in South Wales, upon inspecting the exhibition of raw materials, discovered that he had been throwing away an enormous quantity of a valuable article every year. That was spathose iron ore, from which some of the finest quality of iron was manufactured.

Professor Morris remarked that the paper of Professor Ansted was of value for the suggestions it contained, though he thought it probable that the plans of the Commissioners were already matured. He thought in all these matters the *laissez faire* principle was the best. With regard to the mineral department, it appeared from what had fallen from some speakers, that fear was entertained of its being made too general. There were two great classes of minerals—one in the crystallised form, of great beauty and rarity, and the other in the earthy form, useful in the industrial processes of commerce. He thought if exhibitors drew attention to the raw materials which might be overlooked by the mass, they would be doing more benefit to commerce than by collecting the more costly and rare crystallised substances from the museums of the world. Many valuable discoveries in the properties and uses of minerals had been made since the Exhibition of 1851, and therefore he thought it was the particular substances which had turned out to be of most value for arts or manufactures which should have the greatest prominence given them in the forthcoming Exhibition. He thought a geographical arrangement would be to some extent useful, if the objects were grouped under the ordinary conditions in which they were met with in nature. The subordinate arrangement of the collections might very well be left to the judgment of the exhibitors themselves, the general principles by which they were to be governed having been first decided upon.

Mr. J. H. Murchison could not refrain from expressing his surprise that in an assembly like this, composed of scientific gentlemen, science as applied to manufactures and commerce should be so lightly treated. Was it not the object of this society to promote manufactures, by encouraging scientific men to favour them with their views and opinions, and thus to enable manufacturers to bring their productions into a more perfect state? Where would our manufactures be without the aid of science? He regretted that Professor Ansted was not present to explain away some of the misconceptions which his paper appeared to have given rise to, and he thought if gentlemen had carefully listened to the paper they would not have made some of the statements they had made that evening. It had been asked for what purpose the forthcoming Exhibition was to be held? Whatever might have been the object of the Exhibition of 1851, the one in 1862 would require a more systematic arrangement than the former one. He apprehended the great purpose was to show the progress which had been made in the manufactures of this country when placed in juxtaposition with those of foreign nations, and he thought the suggestions of Professor Ansted upon that point could scarcely be disregarded in carrying out the Exhibition of 1862.

The Chairman was quite sure that in the consideration of a paper such as that with which they had been favoured with by Prof. Anstead, only one opinion could exist among them, and that was that the suggestions he offered were well worthy of discussion. In his opinion the proper representation of the mineral department of the Exhibition was of the utmost importance to this country, whose prosperity was entirely based upon its mineral productions. He agreed with Mr. Cole, that it would be impracticable to take the various articles from the producers of different countries, and submit them to sub-division and re-arrangement; but he thought the discussion of that evening might be turned to profitable account if it conveyed to intending exhibitors some general idea of what was to be realised. There were several circumstances which tended to give additional interest to the approaching Exhibition; amongst others might be mentioned the vastness of the building to be erected. They were accustomed to speak of areas by the square yard, but buildings for exhibitions were calculated by the acre, and he understood that the area of the Exhibition of 1862 would be two acres larger than that of 1851. He would remark generally, with regard to the arrangement of the Exhibition, that in his opinion some attention should be paid both to the geographical and geological conditions of the various mineral productions. He would point to the Museum of Practical Geology, in Jermyn-street, as the perfection of all they could desire in its arrangements, and he did not think any better model could be found for the representation of practical mining than that institution afforded. With regard to the gathering together of large mineralogical collections, however desirable and interesting, it might be, he feared that such collections from distant countries must be confined to the more remarkable specimens; but that such specimens would be brought he had no doubt, from the competitive spirit alluded to by Mr. Waterhouse Hawkins. The Chairman having alluded to the characteristics of the mineralogical department of the Paris Exhibition, and having spoken in favour of illustrating this department by drawings of the processes of manufacture accompanied by maps and sections, concluded by proposing a vote of thanks to professor Ansted for his paper.

A vote of thanks was then passed.

The Secretary announced that on Wednesday evening next, the 20th inst., a paper, "On the Economic History of Paraffine," by Mr. Charles Tomlinson, would be read.

Proceedings of Institutions.

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WELCHPOOL READING SOCIETY.—In the report for the year ending 31st December, 1860, the Committee say that they are not aware that any circumstances have arisen during the past year to call for special notice. Various causes have naturally occasioned the loss of many who assisted in establishing the Institution, and the Committee much regret that fresh subscribers have not come forward in equal numbers to supply their places. The consequent decrease of income has delayed many additions to the library which are much needed. The Committee can, however, point with satisfaction to the present condition of the finances, and hope that they shall soon be able to make improvements which will render the Society still more useful and attractive. It is proposed to lay out a large portion of the balance in hand in the purchase of new books, and it is hoped that the increased facilities of railway communication will shortly enable the Committee to supply the subscribers with the morning papers on the day of publication. The financial statement shows that the receipts have been £94 7s. 10d. and the expenditure £64 0d. 9d., leaving a balance in the treasurer's hand of £30 7s. 1d.

MEETINGS FOR THE ENSUING WEEK.

MON. ...Royal Inst., 9. Mr. P. B. Chaillu, "Personal Narrative of Travels in Western Central Africa."
British Architects, 8.
Medical, 8½. Clinical Discussion.
R. United Service Inst., 8½. Capt. E. P. Halsted, R.N., "On Iron Clad Ships."

TUES. ...Royal Inst., 3. Professor Owen, "On Fishes."
Civil Engineers, 8. Discussion upon Mr. Murray's paper "On the North Sea or German Ocean."
Statistical, 8. M. de Parieu, "On Taxes on Enjoyments." (Jouissances.)
Pathological, 8.
Ethnological, 8½. 1. Dr. Robert Knox, "On some Ancient Forms of Civilization." 2. Mr. W. Parker Snow, "A few Remarks on the Natives of East Australia, and the Wild Tribes of Tierra del Fuego, with specimens of their workmanship."

WED. ...London Inst., 7.
Meteorological, 7.
Society of Arts, 8. Mr. Charles Tomlinson, "On the Economic History of Paraffine."
Geological, 8.

THURS...Royal Inst., 3. Prof. Tyndall, "On Electricity."
Zoological, 4.
Philological Club, 6.
Numismatic, 7.
Linnæan, 8. 1. Mr. A. Newton, "On the Possibility of taking a Zoological Census." 2. Mr. F. Smith, "On some new species of Ant from the Holy Land." 3. Mr. T. West, "On the Structure of the Feet in Insects."
Chemical, 8. Dr. Williamson, "On Thermo-dynamics in relation to Chemical Affinity."
Royal, 8½.
Antiquaries, 8½.

FRI.... ..R. United Service Inst., 3. Captain Ward, R.N., "LifeBoats."
Royal Inst., 8. Prof. H. D. Rogers, "On the Origin of the Parallel Roads of Glen Roy."

SAT. .....Royal Inst., 3. Dr. E. Frankland, "On Inorganic Chemistry."
Royal Botanic, 3¾.

PATENT LAW AMENDMENT ACT.

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APPLICATIONS FOR PATENTS AND PROTECTION ALLOWED.

[*From Gazette, March 8th*, 1861.]

Dated 29th October, 1860.

2646. A. S. Stocker, Wolverhampton—Imp. in the manufacture of horse and other shoes, and in the machinery or apparatus to be employed therein, part of which imps. are also applicable to metal boot heels and various other articles.

Dated 12th January, 1861.

92. Hon. W. E. Fitz Maurice, 12, Hyde park-gate—Imp. in generating heat for locomotive, marine, and other boilers and furnaces.
96. M. V. Boquet, 224, Rue de Rivoli, Paris—An imp. mode of stoppering or closing canisters, bottles, or other vessels.

Dated 21st January, 1861.

166. J. B. Pascal, Lyons, France—Imp. in generating burning gases to be applied as a motive power, and in apparatus for the same.

Dated 29th January, 1861.

232. J. Robertson, Upper Newington, Mount Pleasant, Liverpool—An imp. or imps. in sewing machines.

Dated 2nd February, 1861.

284. W. Clark, 53, Chancery-lane—Imp. in instruments for testing the alcoholic strengths of liquids. (A com),

Dated 5th February, 1861.

296. R. Jeffrey, Guildford, Surrey—An improved tumbler lever and body, applicable to double and single breech loading guns.

Dated 11th February, 1861.

348. R. A. Brooman, 166, Fleet-street—An improved gas apparatus, intended chiefly for lighting pipes, cigars, and cigarettes. (A com.)

Dated 14th February, 1861.

380. H. D. P. Cunningham, Bury, near Gosport—Imp. in sails and in the rig of ships and vessels.

Dated 16th February, 1861.

390. J. Walker, Rhodes, near Manchester—Imp. in the manufacture of soles for clogs and other coverings for the feet, and in the machinery employed therein.
392. J. Horn, Whitechapel—Imp. in machinery or apparatus for the manufacture of bitumenised paper pipes, and other similar articles.
394. T. Settle, Bolton—A certain imp. in machinery or apparatus employed in preparing cotton, wool, flax, and other fibrous substances for spinning.

Dated 18th February, 1861.

396. J. Womersley, Norwich—Imp. in paper-making machines.
398. F. Schafer, Golden-square—An imp. in travelling bags and in frames for the same.

Dated 19th February, 1861.

402. A. Carter, Langley-place, East India-road, Poplar—An improved stadium or telemetre.
404. J. Browning, Minories—Imp. in telescopes and in covers for the object thereof.
406. T. Pedrick, 8, Brighton-terrace, Brixton—Imp. in obtaining and applying motive power by water, and in apparatus connected therewith.
408. W. Clark, 53, Chancery-lane—Imp. in the preparation of alkaline and earthy cyanides. (A com.)
410. A. V. Newton, 66, Chancery-lane—An improved mode of coupling the rails of railways. (A com.)
412. W. E. Newton, 66, Chancery-lane—Imp. in the construction of guns, and in loading and firing the same. (A com.)
414. A. Turner, Leicester—Imp. in preparing warps for the manufacture of elastic fabrics.

Dated 20th February, 1861.

418. C. Smith, Manchester—Imp. in machinery or apparatus for cutting or shaping soap or other similar materials.
422. G. Parsons, Martock, Somersetshire—Imp. in the construction of wheels.
424. T. Richardson, Newcastle-upon-Tyne—Imp. in the manufacture of manure.

Dated 21st February, 1861.

425. J. Louch, 69, Fenchurch-street—Imp. in furnaces.
427. C. Maschwitz, jun., Birmingham—A new or improved tap or stop cock for liquids, steam, and gas.
429. J. Moon, Bedford row, Middlesex—Imp. in means or apparatus for closing the passages of the chimneys from stoves and other fire places.
430. J. J. Miller, jun., Clarendon-place, Vassall-road, Brixton—Imp. in apparatus for governing or regulating the speed of steam and other engines or machines.
431. J. Longshaw, Manchester—An improved method of applying breaks to the wheels of railway and other carriages.
432. W. E. Newton, 66, Chancery-lane—Imp. in centrifugal governors for marine and other steam engines and other motors. (A com.)
433. W. E. Newton, 66, Chancery-lane—Imp. in breaks applicable to railway carriages. (A com.)
435. D. Evans, Stratford, Essex—Imp. in the manufacture of railway and other wheels.
436. W. Watson and A. Watson, Whitehaven—Imp. in machinery or apparatus for casting bullets.
437. J. H. Johnson, 47, Lincoln's-inn-fields—The application of certain vegetable substances to the manufacture of paper pulp, and the mode of treating the same for that purpose. (A com.)

Dated 22nd February, 1861.

439. B. Lang, Skinner-street, Snow-hill—Imp. in apparatus for feeding infants and invalids.

440. A. Crookes and H Roberts, Sheffield—An imp. in Doctor's calico webs or scrapers, used in the process of printing calicoes, muslins, and other textile fabrics
441. A. L. Cole, United Service Club, Pall-mall—Imp. in fire-arms.
442. J. B. Mannix, 21, Torriano-grove, Kentish-town—An improved method of applying springs to railway and other carriages.
443. H. G. Prossor, Waterford—Imp. in the mode of, and apparatus for, singeing the hairs from off the carcasses of pigs.
444. H. G. Prossor, Waterford—Improved apparatus to be used on the decks of ships, for the purpose of separating chaff, straw, sand, or other foreign substances from corn or other grain, when it is being deposited in their holds for shipment.
445. H. Hatchwell, Newton Abbott, Devonshire, and S. B. Hatchwell, London—An imp. in stools or seats.
446. E. T. Truman, Old Burlington-street—Imp in masticators or machines employed in the mastication of gutta percha, india-rubber, and other similar articles.
447. M. L. J. Lavater, Guildford street, York-road, Lambeth—Imp. in the manufacture of pouches of india-rubber and india-rubber fabrics.
448. A. Horwood, 29, Great Quebec street, New-road—Imp. in the application of electricity for communicating by signals with carriages in motion on railways.
452. R. Cuthbert and W. Cuthbert, Newton-le Willows, Yorkshire—Improvements in reaping machines and grass-mowing machines.
453. A. Barclay, Kilmarnock—Imp. in pumping engines.
454. J. E. Cook, Greenock—Imp. in coating and protecting the silvered surfaces of looking-glasses or mirrors.
455. R. Mushet, Coleford, Gloucestershire—An imp. or imps. in the manufacture of cast-steel.
456. J. Martin, 10, Church-row, Limehouse—Imp. in the preparation of red dyes.
457. C. Stevens, 31, Charing-cross—An improved method of unhooking in Jacquard machines. (A com.)
458. C. Stevens, 31, Charing-cross—An improved elastic horse collar. (A com.)
459. A. L. A. Herbelot, Paris—Machinery for reducing wood into chips or shavings.
460. H. Mackenzie, Ardross and Dundonnell, Ross, N.B.—Improved means of applying the water of rivers for driving mills without weirs or other obstruction to the passage of salmon and other fish.
461. J. W. Wyatt, Bunhill-row, Finsbury—Imp. in coating or covering metallic springs or bands for crinolines and other articles of dress.
462. M. Meyers, Great Alie-street—Imp. in woven fabrics.
463. G. Ward and J. Gaskell—Imp. in machinery or apparatus for making healds.
465. F. E. Massey, 39, Rue de l'Echiquier, Paris—Imp. in the construction of self-inking stamps for postal and other purposes.
466. W. O'Shaughnessy Brooke, Parliament-street—Imp. in apparatus for suspending electric telegraph wires.
467. J. M. Dunlop, Manchester—Imp. in machinery suitabln for cutting india-rubber fillets.
468. J. Warren, Maldon—Imp. in chaff-cutting machines.
469. L. Pohl, Gffenbach, Germany—Imp. in albums or books for holding photographs, engravings, and other representations, and in binding together sheets or pieces of pasteboard or such like stiff materials, especially for the purpose of forming such albums or books. (A com.)
472. J. Hinks, Birmingham—An imp. or imps. in glass chimneys for lamps with flat wicks.
473. R. Mushet, Coleford, Gloucestershire—An imp. or imps. in the manufacture of cast steel.

Dated 25th February, 1861.

476. W. G. Smith, Elizabeth Port, Union County, U.S.—An imp. in the cutting apparatus of harvesters.
477. W. F. Henson, 15, New Cavendish-street, Portland-place—Imp. in springs.
478. J. Leeming, Bradford—Imp. in jacquard engines.
481. G. Clark, 11, Nicholl-square—Imp. in the manufacture and mode of laying down submarine electro-telegraphic cables.
482. G. Clark, 11, Nicholl-square—An improved mode of connecting and fastening together blocks, plates, or slabs of wood, metal, or any other material.
483. L. A. Bigelow, High Holborn—Improved machinery for making boots and shoes. (A com.)
485. J. Barling, Belle Grange, Lancashire—Imp. in the mode of applying engine power to wheels and other like instruments employed in producing locomotion, whether by land or water.
486. J. Young, Limefield, Edinburgh—Imp. in apparatus for the treatment or distillation of bituminous substances.
488. C. C. Regnault, Margaret-street, Cavendish-square—Imp. in the manufacture of oils, and in treating oils and fats for purposes of purifying, decolorizing, clarifying, and disinfecting them.

Dated 26th February, 1861.

489. E. Hettrick, North Hylton, near Sunderland—Imp. in the construction of furnaces for the prevention or consumption of smoke.
490. G. Davies, 1, Serle-street, Lincoln's-inn—Imp. in mechanical beds for invalids, applicable also to tables for anatomical or surgical operations. (A com.)
491. R. Tiernan, Liverpool—An improved apparatus for drawing liquid substances from vessels containing the same.
492. W. H. James, Old Kent-road, Surrey—Imp. in the means or apparatus for taking or catching of fish, parts of which imps. are applicable to propelling and to arresting the progress of ships and boats, and to the forming of communication therefrom to the shore.
493. R. A. Brooman, 166, Fleet-street—Improved materials for, and imps. in, the manufacture of sugar moulds. (A com.)
494. W. Parish, New North-road, Hoxton—Imp. in the construction of tobacco pipes.
495. J. T. Pagan and T. B. Willans, Rochdale—An imp. in the manufacture of flannel.
497. M. Orenstein, Jewry-street, Aldgate—Improved means or apparatus for securing watches, and preventing the surreptitious abstraction of such articles from the pockets or other parts of the dress of the wearer.
498. L. Sideman and S. Phillips, Manchester—Imp. in hats, or coverings for the head.
499. J. H. Johnson, 47, Lincoln's-inn-fields—Imp. in forges. (A com.)

Dated 27th February, 1861.

501. W. Hudson and C. Catlow, Burnley, Lancashire—Certain imp. in power looms for weaving.
503. C. Stevens, 31, Charing-cross—Imp. in chimneys. (A com.)
505. F. Ransome, Ipswich—Imp. in the manufacture of artificial stone and cement.
507. J. T. Whitgrove, Worcester—Imp. in funeral or mourning carriages.
509. W. Weallens, Newcastle-upon-Tyne—Imp. in steam engines and boilers, and in propelling and steering vessels.

PATENTS SEALED.

[*From Gazette, March* 8*th*, 1861.]

March 8*th*.
2189. J. Greenwood.
2193. R. C. Clapham.
2194. J. Dénéchaud and J. Chapa.
2196. T. Boyle.
2202. F. A. N. Freppel.
2203. R. H. C. Wilson.
2204. J. Petrie, jun.
2205. R. H. Gratrix and M. P. Javal.
2310. T. Fallows and R. Wild.
2362. A. F. Sheppard.
2481. J. Coleman, jun.
2486. W. E. Newton.
2543. A. V. Newton.
2605. H. Cook.
2654. W. E. Newton.
2813. C. W. Williams.
2868. J. F. Carosin.
56. E. C. Shepard.
62. S. Moulton.

[*From Gazette, March* 12*th*, 1861.]

March 12*th*.
2210. A. Ransford.
2214. F. M. Murton and J. Millington.
2220. C. T. Launay and A. M. A. D. de Vernez.
2221. J. Cooke.
2223. A. Burdess.
2225. J. Petrie.
2228. P. Pautard.
2231. W. E. Gedge.
2239. G. J. Wainwright and C. T. Bradbury.
2240. M. Burke.
2241. G. Davies.
2243. J. Horsey.
2244. F. Seiler.
2247. J. M. Napier.
2248. T. Barnett.
2249. S. Barnwell & A. Rollason.
2255. J. H. Walsh.
2258. W. H. Teulon.
2280. M. Sautter.
2290. V. H. Laurent.
2303. R. Smith.
2306. H. E. Skinner and W. H. Miller.
2359. W. Green.
2558. J. Burch.
2907. J. S. Manton and T. Islip.
2968. T. Whitehead.
2995. J. Musgrave.
3133. E. Whitehall.
3180. I. Dimock.

PATENTS ON WHICH THE STAMP DUTY OF £50 HAS BEEN PAID.

[*From Gazette, March* 8*th*, 1861.]

March 6*th*.
466. B. B. Stoney.
492. G. T. Bousfield.
508. J. T. Coupier.
514. J. Jameson.

[*From Gazette, March* 12*th*, 1861.]

March 7*th*.
467. T. Lyne.
468. J. H. Johnson.

March 8*th*.
529. A. Wallis and C. Haslam.

March 9*th*.
489. J. Young.

PATENTS ON WHICH THE STAMP DUTY OF £100 HAS BEEN PAID.

[*From Gazette, March* 8*th*, 1861.]

March 4*th*.
684. F. Seller.

March 6*th*.
585. G. Appolt and C. Appolt.

[*From Gazette, March* 12*th*, 1861.]

March 7*th*.
547. T. Dunn.
550. G. Beardsley.

March 8*th*.
562. J. Smith.
567. W. Young.

March 9*th*.
598. L. Whitaker, J. Diggle, and G. Howarth.